SOUTHERN CALIFORNIA ASSOCIATIONOF MARINE INVERTEBRATE TAXONOMISTS

May–June, 2018 SCAMIT Newsletter Vol. 37 No. 1

Terebra pedroana, photo by K. Barwick

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: 1 February 2019

7 MAY 2018, MOLLUSCA PROBLEMS, OCSD

Attendance: Megan Lilly, Wendy Enright, CSD: Erin Oderlin, Greg Lyon, CLAEMD; Jovairia Loan, Chase McDonald, LACSD; Mike McCarthy, Kelvin Barwick, OCSD; Katy Estes-Smargiassi, Austin Hendy, NHMLAC - IP; N. Scott Rugh, Invertebrate Paleontologist; Erica Keppel, Smithsonian (remote).

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

Kelvin opened the meeting by calling for a round of introductions for the sake of our remote attendee, Erika Keppel of the Smithsonian.

Next the Treasurer, Erin Oderlin, reminded everyone that May is Membership month. She said that dues have increased but this is the first time since SCAMIT's inception in 1982. You can now pay by check, cash, or Paypal. Erin asked that however you pay, please always include the completed membership form for her records. If you do choose Paypal you will have to absorb the associated fees. Megan Lilly, SCAMIT Secretary, then gave an update on Newsletter production. Recently, she completed Vol 36 No. 3 & 4. Both are now posted on the SCAMIT website and the printed copies will be mailed out the week of May 14th.

Kelvin Barwick, President, mentioned that the SCAMIT officer election is over and results are in but he doesn't have the official copy yet and therefore didn't announce the suite of officers. There was much guffawing by those present, knowing that the current officers were the only ones on the ballot, thus, leaving little doubt as to the outcome.

Megan then brought up the idea of a pre-Bight'18 trawl meeting for the invertebrate taxonomists to discuss protocols and conventions for field processing, e.g., vouchering, preservation, etc. A discussion ensued as to whether this should be more of a SCAMIT meeting or a Bight'18 meeting. It was decided that it will be announced under the auspices of the Bight'18 Trawl Field Committee rather than SCAMIT.

With that the taxonomy portion of the meeting began. Kelvin started with a review of specimens he had examined with Katy Estes-Smargiassi (NHMLAC-IP). One "trick" they discovered when working with many of the scaphopods is to dry them before examination as this is helpful when trying to view sculpture.

Dentalium vallicolens has sculpturing of lines which continues all the way from the aperture down to the apex and a pronounced curve. In comparison, *Graptacme semipolitum* has faint sculpturing that disappears prior to the aperture and overall the animal is "stubbier"; the curvature, however, looks very similar to *D. vallicolens*.

Rhabdus rectius is a bit easier to distinguish, it is straight, with a relatively thin shell and has no sculpture. If worried about confusing it with *Antalis pretiosa*, the latter is going to be wider and significantly more curved. As part of Katy and Kelvin's review, specimens from participating agencies identified as *A. pretiosa* were found to be a mix of *G. semipolitum* and *R. rectius* (Table 1). Along with tabulated results (Table 1) of their review, an ID sheet comparing these 3 species is attached at the end of this newsletter. The absence of verifiable specimens of *A. pretiosa* warrant further investigation.

Table 1 - Dentaliida review at NHMLAC-IP with Katy Estes-Smargiassi on March 2, 2018

Agency/ Owner	Voucher #	Station	Collection Date	Depth	No.	Original ID	Final ID
LACSD	NA	0790-2B/22	Aug-90	151 m	1	*Dentalium semipolitum*	*Rhabdus rectius*
LACSD	NA	0714-10B	15-Jan	151 m	1	*Antalis pretiosa*	*Graptacme semipolitum*
OCSD	2416	58(1)	10-Jul-14	293 m	1	*Antalis pretiosa*	*Rhabdus rectius*
OCSD	1751	C4(1)	7-Jul-11	187m	24	*Rabdus rectius*	*Rhabdus rectius*
CLAEMD	NA	SMB	15-Jul	131 m	1	*Antalis pretiosa*	*Graptacme semipolitum*
CSD	NA	B11	26-Jul-17	87 m	1	*Dentalium vallicolens*	*Dentalium vallicolens*
CSD/KB personal collection	None	I20(1)	27-Jan-97	189 ft.	1	Scaphopoda	*Dentalium vallicolens*
CSD/KB personal collection	None	I7(2)	23-Jul-97	165 ft	1	Scaphopoda	*Dentalium vallicolens*
CSD/KB personal collection	None	I21(2)	22-Jan-97	136 ft.	1	Scaphopoda	*Graptacme semipolitum*
CSD/KB personal collection	None	2180	30-Jul-96	315 ft.	2	Scaphopoda	*Dentalium vallicolens*

We then moved on to the problem of the day – *Gadila tolmiei* and *Cadulus californicus*. As promised after the November 5, 2012 meeting on the same subject, Kelvin was preparing voucher sheets for both species. He came to the realization that the issue was still unresolved. Therefore, he was turning, again, to the collective wisdom of SCAMIT members.

The issue raised in 2012 was that Pilsbry& Sharp (1897-1898) had stated that *C. californicus* was larger, in general, than *G. tolmiei* as well as more inflated. This was born out by the published illustrations of the types. However, SCAMIT (1996) reported that upon examination of museum specimens of the two species: "It was apparent that what was being recorded as *P. californicus* by LA County was actually *P. tolmiei*. The two species differ in their general shape, *P. californicus* being more slender than *P. tolmiei*, with a less prominent inflation of the shell prior to formation of the adult aperture. Even immature specimens should be separable based on inflation."

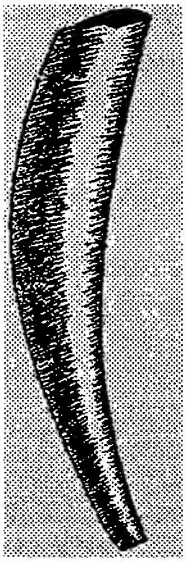

Fig. 1. *Cadulus tolmiei* (modified from Dall 1897)

Kelvin went back to the beginning and looked at the original descriptions for the two species. *Cadulus tolmiei* was described by Dall in 1897 (Victoria, Vancouver Island, 60 fms.). The description is rather terse and accompanied with a small shaded line drawing (Figure 1). Shimek (1989) reported that the type was lost and designated Dall's figure as the paratype. Steiner and Kabat (2004) speculate that it is most likely the holotype.

Pilsbry and Sharp published their description of *C. californicus* (Tilamook Bay, Oregon,786 fms.) the following year in 1898. Within the same publication they described a specimen of *C. tolmiei* but not the type. It is here that they state that it was "smaller and less inflated than *C. californicus*." A variant of *C. tolmiei* was also described, *C. newcombei*; this was later synonymized by Steiner and Kabat (1994).

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Kelvin drew everyone's attention to a couple of phrases found in the original descriptions for *C. californicus*. First it states, "outline of concave side noticeably convex in the region of greatest swelling." The second phrase postulated that "two lateral nicks may be normally present" at the shell apex. See figure A(5) in the accompanying *C. californicus* voucher sheet. Significantly Dall reported that the "posterior orifice" of *G. tolmiei* is lacking sculpture.

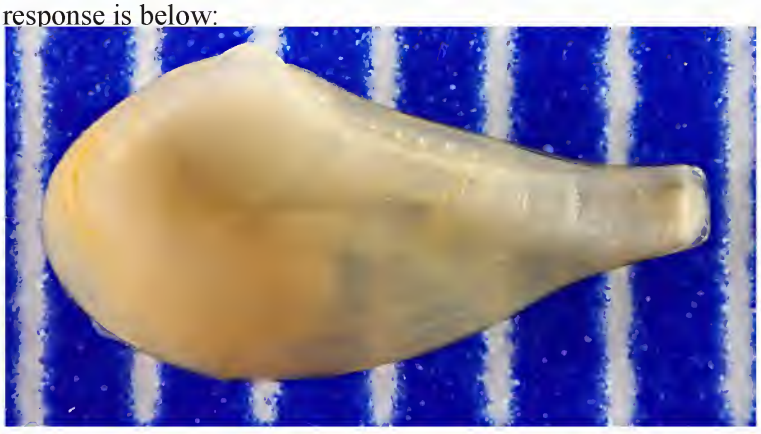
With this in mind, Kelvin began by exhibiting the type images with images of specimens provided by the participating agencies that had been previously ascribed to one or the other taxa. A few things became readily evident to all present: First, all the specimens with intact apertures appeared to have lateral nicks described for *C. californicus*. Second, when comparing the concave and convex regions they all seem to match *C. californicus* as well. When looking at the historical literature it is important to keep in mind that the convex side is ventral and the concave side is dorsal.

All those present agreed that the published description for *G. tolmiei* was insufficient; making it unclear how to apply it to local taxa. Furthermore, it was concluded that all the material provided for this review best resembled *C. californicus*. To clarify and codify this Kelvin will prepare a voucher sheet for *C. californicus* (see attachment at the end of the newsletter).

With Kelvin's presentation on Scaphopods complete, we started to look at FID specimens that attendees had brought.

First up was an unusual looking *Terebra pedroana* which Kelvin said threw him initially but eventually he decided it was just a variant of this species (see cover photo).

Greg Lyon had brought an image of a "smoothish" *Nuculana hamata*. It was decided that the images should be sent to Paul Valentich-Scott for his opinion. This has since happened and Paul's response is below:



CLAEMD - FA17, July 12, 2017, 83m. Tick mark = 1mm.
Photo by G. Lyon

"I have never seen this particular form of *Nuculana hamata* before, especially with the strong radial striae. As you noted in our Panamic book, we were very frustrated with this group and basically couldn't solve the issue through standard shell morphology. Bottom line, I'd continue to track it and maybe call the various morphs *hamata* A, B, etc."

Greg then brought up the issue of *Rhamphidonta* and *Cymatioa* and his efforts of comparing and contrasting the two. *Cymatioa* has 2 teeth on the left valve and a wavy ventral margin; most of the specimens he examined (down to 2 mm) were *Cymatioa*. He noted that the wavy margin becomes evident at approximately 5 mm and becomes more obvious as they get larger. It was requested that Greg share his presentation (it can be found on the SCAMIT website in the Taxonomic Tools). Don told people to also keep in mind that *Rhamphidonta* should have an iridescent periostracum.

After lunch we addressed the issue of *Lirobittium* which has been troubling SCB taxonomists for some time. At the same 2012 meeting where the deep-water Gadilids were discussed, it had been decided that *Lirobittium larum*, *Lirobittium quadrifilatum* and *Lirobittium rugatum* were a complex and that they would be combined. However, at the time a name was not assigned. It was later decided that all three species should be referred to as *Lirobittium rugatum* Cmplx. Exceptions would of course apply if sampling in an unusual habitat and a unique and "different" species is seen. Austin commented that Ellen Strong is working on this genus, but agrees that they are a "mess" and in need of work.

Next up was *Crepidula* spp. The question was posed - What literature to use for identification? People suggested, Hoagland 1977, McClean 1969, and Light's Manual, 2007. Austin then spoke up and said that Rachel Collin is working on Calyptraeidae. He will check with her and let us know what she recommends.

Cyclocardia spp, and at what size to back off to genus, were discussed next. During a 2012 SCAMIT meeting with Gene Coan it was decided that a 5mm size limit was appropriate. People were reminded to see Coan 1977 for his preliminary review of Cardiidae. It was agreed that this information needed to be sent out to the Bight'18 list server so that all mollusk taxonomists are on the same page.

Aplacophora – how are we going to handle them? Some agencies are using birefringence for their identifications and some are not. It was agreed that birefringence is primary and morphometrics secondary. We discussed needing to check with molluscan taxonomists and making sure they have the ability to use birefringence in order to standardize Bight'18 aplacophoran identifications. Greg and Erin then asked if there was a minimum size for identification? There was a brief discussion and it was decided not to set a strict size limit, but rather taxonomists should do the best they can and if the spicules seem underdeveloped back off to Chaetodermatidae and set aside for a post-Bight reconciliation meeting.

Tellina spp. were then reviewed. At OCSD taxonomists use the rule that if there is absolutely no evidence of sculpturing at all, they are called *Tellina* sp B everything else is called *T. carpenteri*. CSD disagrees and feels that *Tellina* sp B (which is probably *T. cadieni*) can have some sculpturing, and they rely more heavily on color pattern. Greg Lyon chimed in and said that CLAEMD uses a similar approach to CSD. Wendy and Megan will try to photograph the differences and send the images out to SCAMIT list server to see if there is agreement or consistency.

Don Cadien then had the floor and wanted us to know that prior to Bight'18, everything we have known about the taxonomy of aeolid nudibranchs is now wrong. Massive changes have occurred to this group based on a paper by Korshunova *et al.*, 2017. The changes are based on DNA and morphology and are extremely comprehensive. Edition 12 of the Species List will reflect these changes.

Lastly, Kelvin reviewed the mollusk hold list of the Species List. It is very small and there wasn't much to go through. It was realized that some of the Weston species will never be documented and therefore need to go to a "permanent hold/archive" list, and a few others have been dealt with already.

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11 JUNE 2018, ORBINIIDAE, NHMLAC, B. HAGGIN & A. LOVELAND

Attendance: Kelvin Barwick, Mike McCarthy, Ernie Ruckman, Rob Gamber, OCSD; Ashley Loveland, CCSF; Jennifer Smolenski, Greg Lyon, Erin Oderlin, CLAEMD; Larry Lovell, DCE; Gabriel Rodriguez, CSD; Angelica Zavala Lopez, MTS; Bill Furlong, Christine Boren, Norbert Lee, Brent Haggin, LACSD; Leslie Harris, NHMLAC.

The business meeting began with the usual announcements of upcoming meetings. Afterwards, Kelvin let attendees know that the SCAMIT Species List Review Committee (SLRC) is on track to publish Ed. 12 by July 1, 2018.

With regards to the upcoming Bight'18 project, LACSD has volunteered to do all the Re-IDs, with CSD performing QC for LACSD. Additionally, the SCAMIT list server will be the official list server for Bight'18 taxonomy questions. Kelvin offered to demonstrate, at a later meeting, how to use the list server's Archive function.

The taxonomy portion of the day was opened by Brent Haggin. He gave a thorough and detailed presentation covering the morphology of the various subfamilies and groups of Orbiniidae, as well as provided a comprehensive character table to the family, and reviewed voucher sheets for 9 provisional species and 4 described species. His presentation, character table, and voucher sheets, can all be found on the SCAMIT website in the Taxonomic Tools section.

After Brent's presentation was complete, it was time for Ashley Loveland from CCSF to take the floor. She started by reviewing species from "her neck of the woods".

Scoloplos sp SF1 (Norris 2007): lacks subpodial lobes; the branchiae begin around setiger 10 or 11; thoracic uncini slightly curved with uneven tines; there is some morphological variation with fewer spines per setiger in larger specimens. *S.* sp SF1 has eyes which are normally not seen in the genus, however, Blake states that juveniles of the genus do have eyes and therefore CCSF could be seeing only juveniles.
Ashley wonders if the morphological variability within *S.* sp SF1 is related to development and size, or should they explore this further and possibly designate additional provisionals? Are there enough character differences between *S.* sp SF1 and *Scoloplos acmeceps* to warrant its own provisional designation? Leslie noted that the size of SF species tends to be much smaller than So Cal species. Ashley responded by saying they don't ever see any gravid specimens. However, she noted that CCSF does record *Scoloplos armiger* which tends to be just as small as *S.* sp SF1, but they do get larger specimens of *S. armiger* on occasion. She also stated that the first setiger with branchiae does tend to correlate with thoracic width. Leslie mentioned a paper which describes juvenile *Leitoscoloplos* as having spines, but losing them as adults, whereas *Scoloplos* is the opposite.

The floor then went back to Brent who told attendees he is also working on an updated key for Orbiniidae. Brent noted that most original IDs are based on anterior fragments; therefore, the key will try not to put too much emphasis on when the branchiae start (on which setiger), cilia on branchiae, etc. He emphasizes starting with setiger 5 to look for parapodial characteristics. {This key is now complete and it too can be found in the Taxonomic Tools section of the website.}

SCAMIT TREASURY SUMMARY 2018

Please find the 2018 Treasury Summary attached at the end of the newsletter. SCAMIT is in "good health" financially, and we always encourage people to apply for, and take advantage of, SCAMIT's publication grant.

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Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

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SCAMIT Treasury Summary
2017-2018

Below is the treasurer's report for 2017-2018. We are raising dues for the first time since the start of SCAMIT in 1982 from $15 to $20 for electronic memberships, $30 to $35 for hardcopy memberships, and $60 to $65 for institutional memberships. We have over 150 members across the US and worldwide. SCAMIT did not award a publication grant this past year. Please help get the word out that these funds are available. As stipulated in our grant policy, we have **$7,750.89** or 25% of our operating budget of $30,512.72 available for publication grants this year. The taxonomic database support tools on our website were maintained by our webmaster. The database expense totaled $425.00.

Account Balances (as of 5/31/18)

Checking	**$ 20,478.33**
Certificate of Deposit	**$ 10,034.39**
Total	**$ 30,512.72**

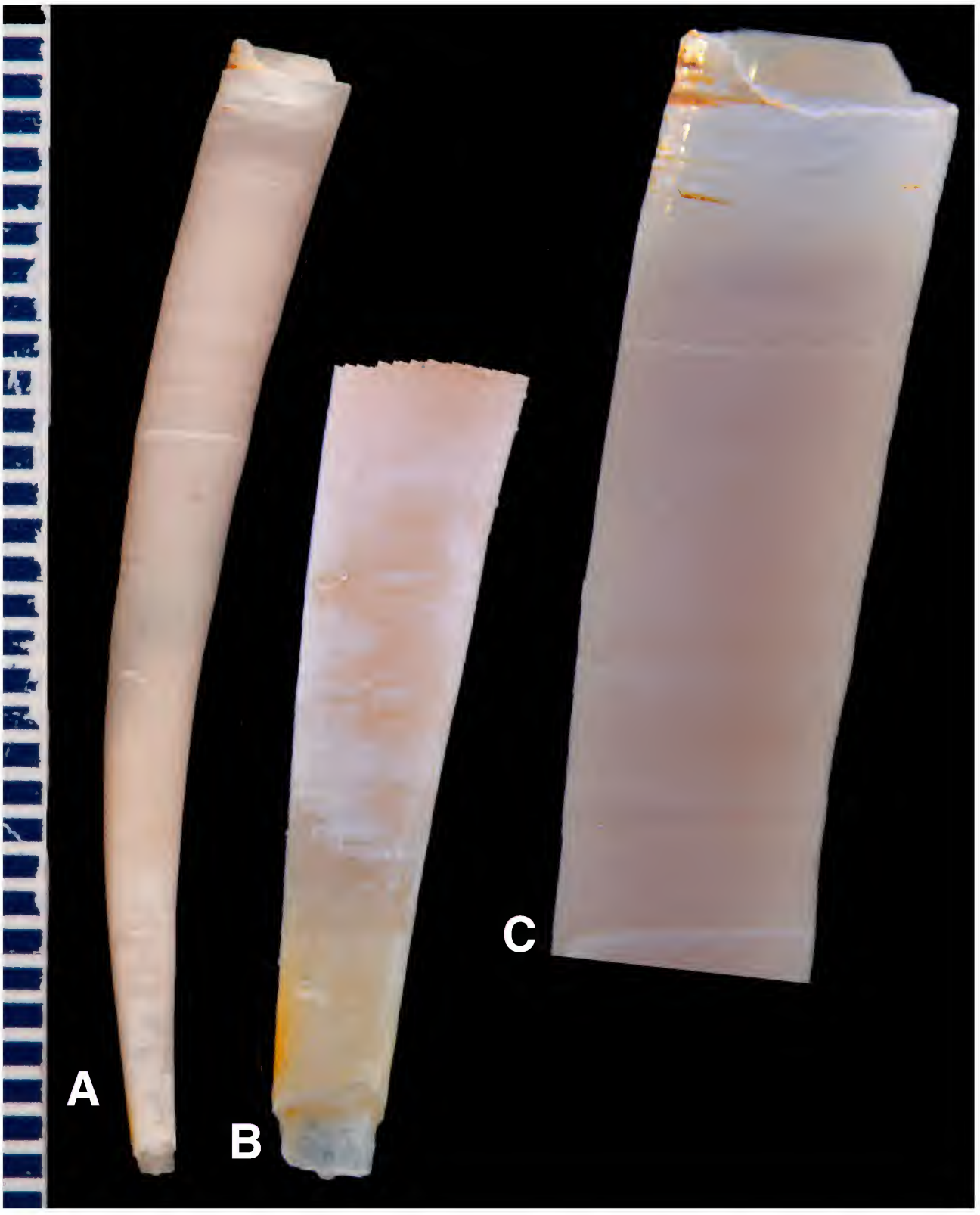
Income

2017-2018 Membership dues	$ 1,978.00
Interest from CD	$ 4.36
Total	**$ 1,982.36**

Expenses

Meeting refreshments	$ 556.93
Executive Committee Luncheon	$ 145.62
All-Member Christmas Luncheon	$ 192.40
CA Tax Board: tax exempt re-application fee	$ 25.00
March 2018 Ascidian workshop	$ 454.60
Website Content & Design	$ 425.00
Newsletters (printing/postage)	$ 549.99
Total	**$ 2,349.54**

Dentalium vallicolens Raymond 1904 – **A** dry shell; **B** detail, apex; **C** detail, near aperture (CSD Station B11, 26JUL2017; 87 m; tick marks = 1 mm)



Graptacme semipolitum (Broderip & Sowerby 1829) – dry **A** shell; **B** detail, apex; **C** detail, aperture; (LACSD 0714-10B, 151 m; tick marks = 1 mm)

Rhabdus rectius (Carpenter 1864) – dry (OCSD Voucher #1751 Station C4(1), 7JUL2011, 187 m; tick marks = 1 mm)

SCAMIT Voucher Sheet

Species: *Cadulus californicus* Pilsbry & Sharp 1898

Group: Family Gadilidae

Vol. 37, No. 1

Date examined: May 7, 2018

Prepared by: K. Barwick

Material Examined:
3 specimens Tanner Basin, Oregon Station R-53 EB5, 25OCT1971, 1150 m
1 specimen Bight 2008 Station 7155, 31JUL08
1 specimen Bight 2008 Station 7526, 13AUG08, 390 m
1 specimen CSD Regional Station 8626; 20JUL2017; 469 m
2 specimens OCSD Sta. 62(1), 13JUL2006, 300 m

Synonyms:
Cadulus (*Platyschides*) *californicus* of Abbott 1974
Polyschides californicus of SCAMIT Ed 4
Gadila tolmiei of authors SCB not Dall 1897

Description:
"Shell large and solid, well curved; smooth and glossy, growth-lines being very faintly indicated; opaque white, the posterior half bluish, subtranslucent, with similarly colored rim at the mouth, or sometime slightly bluish throughout. Stout, decidedly swollen anteriorly, the greatest diameter contained 4⅕ to 4⅔ times in the length of shell; the equator about at the anterior fourth, either oblique, well-marked and slightly subangular or less distinct and gently rounded, tapering rapidly toward both ends; outline of concave side noticeably convex in the region of greatest swelling. Section of tube a trifle flattened between the convex and concave sides at the equator or throughout. Aperture subcircular, somewhat oblique. Anal orifice rather large, slightly oval, with no noticeable callus within, its edge irregular from breakage, but possibly two lateral nicks (see Fig. 7) [Fig A herein] may be normally present" (Pilsbry & Sharp, 1897-1898). Local shells mostly translucent with occasional irregular narrow bands of white that may represent growth lines. Posterior aperture with 4 equally spaced slits on the apex; one each on the right, left, dorsal and ventral aspects (Fig. B - D).

Related Species:
Polyschides quadrifissatus (Pilsbry & Sharp 1898) differs from *C. californicus* by having a slimmer, semi-translucent shell with prominent, evenly spaced bands alternating from clear to opaque white. *P. quadrifissatus* is found at shallower depths.

Distribution:
Pilsbry & Sharp (1897-1989) reports from off Tillamook Bay, Oregon to off San Diego and Gulf of Panama; 252-1270 fathoms; depths from material examined: 300 -1150 m.

Comments:
SCAMIT (1996) reported that *Cadulus californicus* was more slender that *C. tolmiei* "with a less prominent inflation of the shell prior to formation of the adult aperture." This was the general understanding until 2007 when Pilsbry and Sharp (1897-1898) became available to the author electronically. A check of the descriptions and illustrations revealed that, in fact, the reverse was true, i.e., *C. californicus* was the chubby one. A review of material provided by workers in Southern California was presented at the November 5, 2012 meeting (SCAMIT 2012) and followed up with a second discussion at the May 7, 2018 meeting (SCAMIT 2018). At the later meeting it was agreed that all local records of *Gadila tolmiei* (Dall 1897) should be referred to *C. californicus*. For the first time it is presented here as a synonym, of authors SCB not Dall. Dall's (1897) original description and image of *Cadulus tolmiei* make no mention of apical slits. In their re-description, Pilsbry and Sharp (1897-1898) described the "anal orifice [apex] sub-circular, simple" (Fig. A5-8). It is unclear as to whether they saw Dall's specimen.

They report the size of the "Type" but appear to have only reprinted Dall's original measurements.

Steiner and Kabat (2004) reported that the Holotype for *C. tolmiei* was "not located" but surmised that Dall's figure is of the type (USNM 107613 "figured paratype" designated by Shimek (1989)).

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Dall W. H. 1897. Article I. Notice of Some New or Interesting Species of Shells From British Columbia and the Adjacent Region. Natural History Society of British Columbia Bulletin, No. 2. pg. 1-18.

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Steiner G., Kabat A. R. 2004. Catalog of Species-Group Names of Recent and Fossil Scaphopoda (Mollusca). Zoosystema 26(4): pg. 549-726.

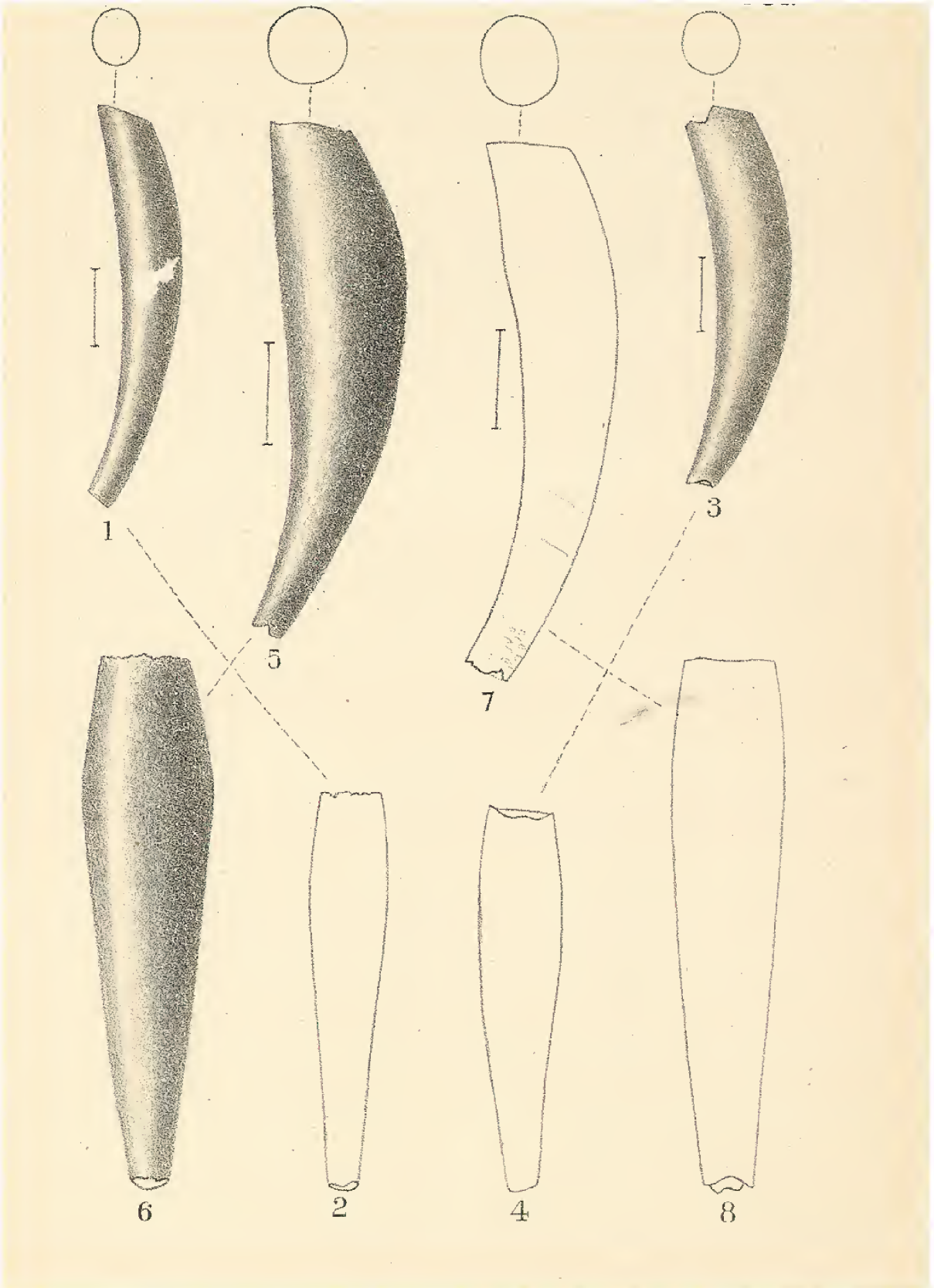

Figure A – **1, 2**. *Cadulus* (*tolmiei* var.?) *newcombei* P.&S. n. var. (11.0 mm); **3, 4**. *C. tolmiei* Dall (10.7 mm); **5-8**. *C. californicus* P.&S. Type USNM No. 107,698 (l4.3 mm). (modified from Plate 34 Pilsbry & Sharp, 1897-1898)

Figure B – *C. californicus* Tanner Basin Station R-53 EB5, 25OCT1971, 1150 m (tick marks = 1 mm;K. Barwick personal collection)

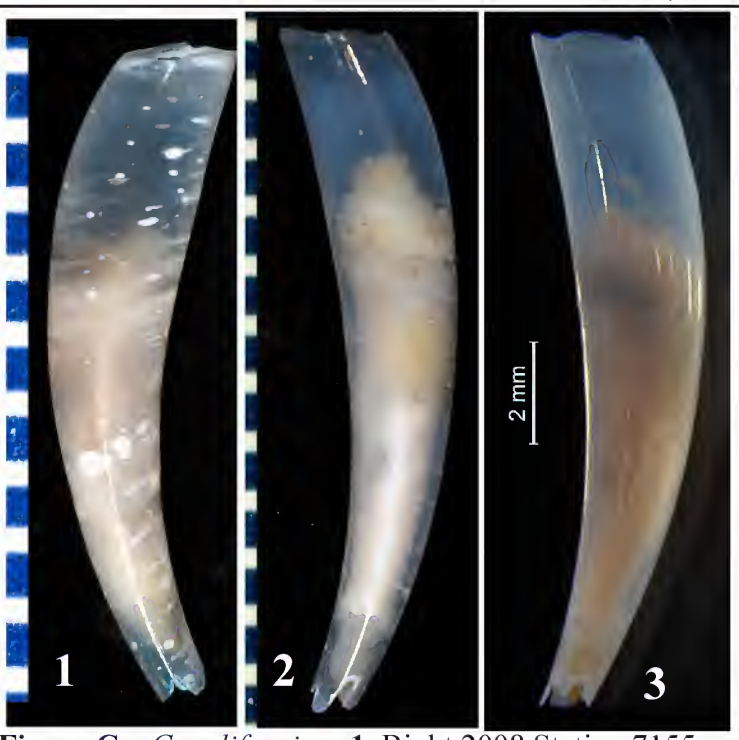

Figure C – *C. californicus* **1**. Bight 2008 Station 7155, 31JUL08, 570 m; **2**. Bight 2008 Station 7526, 13AUG08, 390 m (tick marks = 1 mm); **3**. CSD Regional Station 8626; 20JUL2017; 469 m..

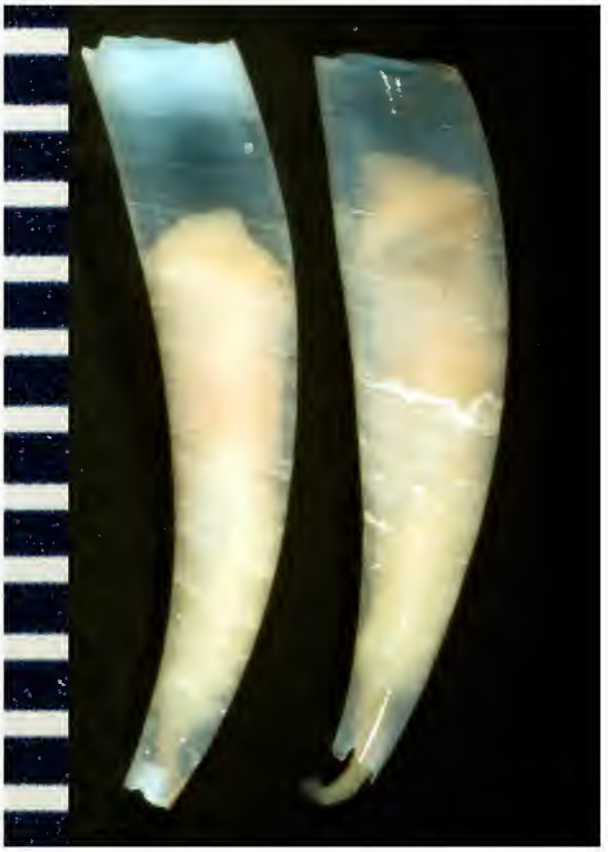

Figure D – *C. californicus* OCSD Sta. 62(1), 13JUL2006, 300 m (tick marks = 1 mm).

SOUTHERN CALIFORNIA ASSOCIATIONOF MARINE INVERTEBRATE TAXONOMISTS

July–August, 2018 SCAMIT Newsletter Vol. 37 No. 2

Anterior ventral view of *Pista wui*
Arrows indicate the original location of the uncini pictured on the left
Photos by K. Barwick, OCSD

This Issue

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: September 2019

(JULY 2018 – NO MEETING)

20 AUGUST 2018, Terebellidae Part II, L. Harris, NHMLAC

Attendance: Leslie Harris, NHMLAC; Erin Oderlin, Greg Lyon, Jennifer Smolenski, CLAEMD; Ron Velarde, Ricardo Martinez, Veronica Rodriguez -Villanueva, Adam Webb, Gabriel Rodriguez, CSD; Diane O'Donohue, SFPUC; Alturo Alvarez-Avilar, UABC, Baja California; Christine Boren, Norbert Lee, Brent Haggin, LACSD; Kelvin Barwick, OCSD; Angelica Zavala Lopez, MTS; Tony Phillips, Larry Lovell, DCE; Nenibarini Zabbey, Uniport, Nigeria.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

The business meeting began with upcoming meeting announcements. After meetings were discussed the passing of Don Reish was brought up. There will be a large public memorial in mid-September (2018) and the next IPC will be held in Long Beach, hosted by CSULB, in honor and remembrance of Dr. Reish.

Erin then had the floor and asked that members please get their dues in through one of SCAMIT's now many forms of payment options.

Next Brent Haggin let everyone know that the keys from the Orbiniidae meeting have been completed and will be distributed. {Ed. note: If you would like to receive a copy of Brent's key, please contact him at: BHaggin@lacsd.org}

With that it was time for the taxonomy portion of the meeting. Ricardo opened by giving an overview of his attendance at the SylPoly meeting in Costa Rica. He thought the meeting was very nice and student orientated. At the conference, Allan Carillo and his colleague disputed the claim they made at the previous meeting about cladistics relationships within the Family Serpulidae using ecological and evolutionary evidence. Leslie let everyone know that the next SylPoly meeting will be at a field station in the fjords of Chile.

The first animal to be discussed was *Harmothoe hirsuta* (Family Polynoidae). There are at least two different *Harmothoe* species in the NEP whose elytra have polygonal divisions, macrotubercles with branched spinose tips, and hirsute antennae and cirri. One, encountered occasionally in grabs and rock dredge hauls, has been identified as *H. hirsuta*. The other is rarely collected and has been left as a provisional species. It turns out that *H. hirsuta* (NEP identifiers) as seen in Ruff (1995) is undescribed and the provisional species is actually *H. hirsuta*. Leslie explained that Johnson describes the true *H. hirsuta* in his paper with a drawing of its elytra, however, he includes the other form (which we have been calling *H. hirsuta* as well) in the syntype material at the museum. Leslie is unsure which individual Ruff used to draw his version of *H. hirsuta* (which should be considered a new species now).

There may actually be more than 2 species. Our common "*hirsuta*" (now a provisional) has smaller tubercles along the margin and the larger ones are more inside. The form illustrated by Ruff has the largest ones on the margin, with the tubercles decreasing in size towards the

middle. Johnson's drawing of the macrotubercle shows distinctly branched tips while the animals collected by Tony have short spinose tips. Please collect specimens so we can resolve whether these differences are inter-specific (4 species) or intra-specific (2 species).

Leslie suggested that we should keep calling the one with the marginal tubercles *H. hirsuta* and call the other one (the one with the "hairy tubercles") *Harmothoe* sp C Harris.

Kelvin then stated that we needed a formal SCAMIT description and provisional voucher sheet before we could start calling the other form *Harmothoe* sp C. After some discussion the room voted on the voucher sheet requirement prior to using the provisional name. The vote was split 50/50, so Kelvin, as SCAMIT President, ruled that a voucher sheet needed to be created.

We then heard from Nenibarini Zabbey, a guest researcher staying with Leslie. Nenibarini works in the Gulf of Guinea, Nigera, for 3 watersheds that form the Niger Delta River system which contains 22 estuaries. The Niger Delta has the 4th largest mangrove habitat in the world. Neni has had experience working in estuarine benthic ecology, environmental justice, wetland restoration ecology, and now polychaete taxonomy. His PhD work was on the study of sites before and after an oil spill in the mangrove system. The spill killed a majority of the mangrove habitat leaving only 27% of the original system viable.

The oil companies operate differently in West Africa than in Europe and N. America. They are supposed to respond and contain a spill within 24 hours, but no one attended the spill for 72 days, and while they were waiting, another spill occurred which took 19 days before it received attention. Shell Corporation investigated but stated that the spill was due to 3rd party interference, and therefore they were not financially responsible for all the damages the communities suffered. For 4 years, volunteering on behalf of Amnesty International, he fought on behalf of his community against the Shell Corporation demanding that they be held responsible for the spill. With some smart litigation techniques, Shell decided to settle out of court so as to not set legal precedence for further lawsuits and awarded the community 88 million dollars as well as assumed clean up and mitigation responsibilities. Currently, they are in the 2nd phase of restoration.

Dr. Zabbey now focuses on research and teaching on wetland and mangrove restoration. Seventy percent of the macrobenthic community is comprised of polychaetes, however there are no polychaete taxonomists that specialize in Nigerian communities. He applied, and was awarded, a British Ecological Society Grant to study "Polychaete diversity of varied health/integrity habitats in different reaches of Bonny Estuary, Niger Delta".

After Nenibarini's talk it was time to move on to, Terebellidae Part 2: Terebellinae, led by Leslie. The day was spent going through Leslie's slide show, which has yet to be published on the SCAMIT website. Below are some notes on characters and species discussed.

Some of the defining characters for Terebellinae are:

- Tubiculous
- Lack expanded tentacular membrane
- Have well developed ventral pads
- Uncini are avicular or pectinate; in double rows for some chaetigers

Publication Date: September 2019

Species discussion:

Amphitritinae sp SD1 CSD 1999 should now be called Terebellinae sp SD1

Artacama spp have distinct round neuropodia with embedded uncini in abdomen

Eupolymnia spp have narrowly winged/smooth notochaetae and face-to-face uncini (interlaced or "zippered")

- *Eupolymnia heterobranchia* (syn: *E. crescentis* Chamberlin 1919 in Hartman 1969)

Lanassa spp are abranchiate, lateral lappets are inconspicuous, and have notochaetae of 1 kind: smooth to finely serrate

Lanice spp have 3 pairs of arborescent branchiae, notochaetae are distally smooth and uncini are avicular that interlock back-to-back

Laphania spp are abranchiate, have no lateral lappets, have a narrow ring-like collar on segment 2 encircling the body, and a glandular patch on anterior thoracic dorsum

Loimia spp have 3 pairs of branchiae and uncini are pectinate

Neoamphitrite spp have up to 40+ thoracic chaetigers, uncini in double rows from segment 11 to end of thorax (avicular), and notochaetae are limbate and distally serrated

Neoleprea spp have 2 pairs of arborescent branchiae, no lateral lappets, 2 types of notochaetae, nephridial papillae on segments 3, 6-23. *Neoleprea* spp of the NEP are poorly described. To separate these taxa, look for the number of chaetigers with double rows of uncini and number of notochaetigers

Nicolea spp have 3 pairs of nephridial papillae on segments 3, 6-7 which are long in males and short in females on 6-7. Smooth-tipped notosetae present from segment 4 and uncini are arranged beak to beak in posterior thoracic segments. *Nicolea* spp are the dominant terebellid in Southern California harbor/dock fouling communities

Phisidia spp are abranchiate, have no lateral lappets, and 2 kinds of notochaetae (both subdistally serrated limbate capillaries): 1) long with short broad edges and 2) short, stout geniculate

Proclea spp are abranchiate, do have lateral lappets, and have 2 kinds of chaetae in anterior thorax (shape changes in posterior thorax)

Scionella spp have 1 pair of branchiae on segment 4, 4 large, flared lateral lappets (last pair with continuous dorsal flange), and 2 kinds of notochaetae: smooth limbate and curved serrate

Scionides dux Chamberlin 1919 is now *Neoamphitrite robusta*. Synonymized by Banse 1980, but was apparently not recorded by Fauchald and does not appear in WoRMS

Spionosphaera spp have eyespots in 2 groups, long and short notochaetae "spinosphaera-style" with 3 regions: 1) distal 2) median swollen region 3) proximal region smooth or bilimbate

- *Spinosphaera harrisae* (syn: *Spinosphaera* sp SD1)

Leslie reviewed the character differences between *Pista* spp and *Betapista* spp. She feels that our *Pista* spp fall into groups and does not propose any changes to the SCAMIT list at this time. The proposed groups are:

Primary Group:
Pista cristata sensu stricto, the "classic *cristata"*. 2 pairs of branchiae, 3 pairs of nephridia, anterior uncini with well-developed crests. Most local species fall into this group.

Subgroup - Species with lateral lappets on segments 2-6 or 2-7
Including:

Pista agassizi (synonym: *Pista n.* sp. 1)
Pista "brevibranchiata" morphs
Pista brevibranchiata
Pista cristata (From Norway, probably not in NEP)
Pista sp E Harris 2013

Leslie then discussed the differences in lateral lappets and the transverse membrane between *Pista brevibranchiata, P. agassizi, and Pista* sp E.

Subgroup - Species with lateral lappets on segments 2-4
Including**:**

Pista alata
Pista disjuncta
Pista wui (synonym: *Pista* sp beta Lovell 2006)
Pista sp SF1

Subgroup - Represented by *Pista elongata*. 3 pairs of branchiae starting on segment 2, multiple pairs of nephridia, and distinctive large anterior uncini with reduced crests.
Including:

Pista moorei
Pista pacifica
Betapista dekkerae

Subgroup - Single pair of branchiae and reduced lateral lappets
Including:

Pista estevanica (NEP) and *P. bansei* (Arctic). These have been placed in the genus *Pistella* Hartmann-Schroder by some authors but *Pistella* sensu stricto has only short-handled uncini whereas *P. estevanica* has long-handled anterior uncini.

And with that Leslie concluded her thorough presentation with the comment - "I did not include many of my provisionals".

Publication Date: September 2019

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Please visit the SCAMIT Website at: www.scamit.org

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

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SOUTHERN CALIFORNIA ASSOCIATIONOF MARINE INVERTEBRATE TAXONOMISTS

September–October, 2018 SCAMIT Newsletter Vol. 37 No. 3

Dendraster excentricus
CSD Trawls, B'18 10237, 1 August 2018, 11m
Photo - Zoë Scott

This Issue

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: October 2019

10 SEPTEMBER 2018, BIGHT'18 TRAWL FIDs, OCSD, LEAD - M. LILLY

Attendance: Laura Terriquez, Danny Tang, Ben Ferraro, Ernie Ruckman, Kelvin Barwick, OCSD; Jennifer Smolenski, Greg Lyon, Erin Oderlin, CLAEMD; Don Cadien, Jovairia Loan, LACSD; Wendy Enright, Megan Lilly, CSD.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

The business portion of the day started with a discussion of recent activities of the SCAMIT Executive Committee. They have voted to donate $2000 to the International Polychaete Conference (IPC) Student Fund in honor of Dr. Don Reish. Kelvin is looking for a volunteer among the attending SCAMIT members who would be willing to say a few words in his honor, preferably someone who knew Dr. Reish well.

Megan then announced that the March/April newsletter was in progress and should be published in the next couple weeks. After that all bets are off as your Secretary digs into Bight'18 benthic samples.

Kelvin showed us a very short archived silent French film from 1928, "Sea Urchins", by pioneering French filmmaker and scientist Jean Painlevé. It can be viewed at:

https://youtu.be/9rkMpkpy5Qg

After watching the film and ordering our lunch it was into the *Brisaster* abyss we go…
Erin showed us her table of measurements and expressed concern about the fact that she arrived at different answers when she measured them multiple times and these differences, on occasion, lead her to arrive at different species diagnoses.
Lots of discussion ensued regarding everyone's experiences during trawls as it related to large hauls, most common species, trouble-shooting difficult situations, etc.
We briefly looked at Megan's table of Bight'08 *Brisaster* occurrences and whether there may be a pattern from north-south and shallow-deep perspectives. There is a hint of a pattern but more data is needed before any conclusions can made. We will put together these same data from B'13 and B'18 since sample sizes were quite small 10 years ago. It was decided to collate everyone's measurements from here on out. Please send your results to Megan at: mlilly@sandiego.gov

A general philosophical discussion of trawl animals developed regarding what animals to count in the trawl data (fouling vs not; infauna vs epifauna; reef or hard substrate-associated vs soft bottom only, etc.). Many members requested "hard rules", but unfortunately, we have never been able to agree, as a taxonomic community, on those rules and so it remains a "best judgement" call in the field.

The discussion of heart urchins then resumed. Regarding mixed lots of heart urchins and the separating of juvenile animals - if the current protocol of 30 animals returned and measured is followed, is it appropriate to apply the resulting ratio to the entire catch or should an estimate of the proportion of animals less than 30mm be made? No firm decision was reached.

The conversation then turned to other interesting or problematic echinoderms. OCSD encountered a pink juvenile echinoid that was determined to be *Strongylocentrotus fragilis* but its shallow depth (less than 40m?) had caused them to initially question the ID. Megan will investigate the

differences between *Strongylocentrotus* and *Lytechinus* spine and pedicellaria morphology to give us a, hopefully, more precise answer for future questions.

Dr. Rich Mooi is rumored to be interested in paying us a visit in the future so be sure to save interesting specimens and have your most burning questions answered including the size limit at which juvenile *Dendraster* specimens may be separated. Don asserts that he can see a difference at 1-2 mm… witty repartee ensued.

Back to *Brisaster*, most people present took turns measuring a few representative animals. Although measurements were close, there remained a 0.4mm range in test length and a 0.3mm range in petaloid width among participants. In the present case, the ratios still fell out to *B. latifrons* but this degree of variability could potentially yield conflicting answers for smaller animals. It was determined that for all measurements, multiple sets of eyes/measurements were required and the idea of a larger size limit for specific diagnosis was raised again although no action was taken and the protocol remains unchanged. Megan would still like to move the minimum test length up to 35mm, but this will be a question for our, "hopefully", future meeting with Dr. Mooi.

Diverting again from *Brisaster*, we looked at photos from OCSD of a juvenile holothuroid that was likely *Apostichopus parvimensis* based on the black papillae. The specimen was small, at approximately 8 mm, so it's unclear whether the ossicles would be developed enough for diagnostic purposes.

Jojo and Erin then shared some "cheez-it" stars. Erin's was confirmed as *Odontaster crassus* with its characteristic giant recurved tooth on the apex of the jaws. Jojo's animal superficially resembled the *Odontaster* but upon closer examination, key differences were noted. Although it had a strong tooth on the jaw apex, it wasn't recurved, nor was it as large as the one exhibited on Erin's smaller specimen. Also, the paxillae differed with one specimen having "spiny starbursts" and the other having "broccoli florets". Megan took the specimen with her for further investigation and will email Dr. Chris Mah for assistance (which she has yet to do...).

Erin brought out a sweet potato (*Molpadia arenicola*, formerly *Caudina arenicola*) holothuroid for confirmation. Discussion ensued regarding ossicle morphology, separation of *Molpadia* and *Caudina,* and the possibility of other species coming in during warming events.

The last specimens we examined were CSD ophiuroids. We confirmed *Ophiopholis bakeri* and *Ophiacantha diplasia*. It was an excellent teachable moment for many of us.

15 OCTOBER 2018, SPIONIDAE, NHMLAC, LEADS - L. HARRIS & T. PHILLIPS

The business meeting began with the standard announcement of upcoming meetings. It was then mentioned that early registration was open for the IPC. SCAMIT volunteers are needed for registration and throughout the weekend. Anyone who volunteers will be provided with a free t-shirt.

With the business portion complete it was time to move on to spionids. The taxonomy aspect of the day started with a talk by visiting researcher, Arturo Alvarez Aguilar, who gave a presentation titled, *Spionids from Tijuana to Ensenada Coast.* He found that 65% of polychaetes from benthic samples were spionids, with the most dominant species being *Spiophanes norrisi.* The lowest diversity was found in the northern region (just south of the Tijuana River). Arturo believes that depth, salinity, Cu, & Zn are responsible for the low species diversity. It was decided that it would be interesting to compare Arturo's results with past Bight data from the area.

Publication Date: October 2019

Next up was Tony Phillips who presented - *Spionidae of the Southern California Bight: Polydorins*. Almost not officially declared a subfamily, the term polydorin is used for spionid genera with the 5th chaetiger enlarged and bearing large hooks.

Local polydorins are mostly found in soft sediments of bays and estuaries and in rip-rap. Useful characters for both genera and species are as follows:

- Start of branchiae on chaetiger 2 or after chaetiger 5
- Presence of 1 or 2 types of spines on the modified 5th chaetiger
- Presence of companion chaetae on the modified 5th chaetiger
- Presence of superior and/or inferior chaetae on the modified 5th chaetiger
- Prostomium shape
- Presence of eyes
- Presence of chaetae on 1st notopodia
- Presence of a median antenna
- Length of caruncle
- Start of the neuropodial hooks
- Presence of notopodial spines in posterior chaetigers
- Shape and dentition of chaetae
- Is pigmentation present
- Methyl green stain patterns
- Shape of pygidium and presence of pygidial lobes

Tony recommends using the MMS Atlas (Blake 1996), Light's Manual (Light 2007), and the table created by L. Harris and C. Brantley, which can be found on the SCAMIT website in the Taxonomic Tools section.

Tony then moved on to "*Common Infaunal Polydorids of the SCB*":

Boccardia basilaria: Single dark pigment spots that run down the center of the dorsum, large beast. Bill Furlong noted that in the L. Harris Table, the description for *Boccardia basilaria* matches that of *Boccardia pugettensis* except for the pygidium description. Tony believes that *B. pugettensis* isn't found south of San Francisco, therefore, we most likely only encounter *B. basilaria.*

Carazziella sp A: Incised prostomium, shallow shelf and harbors, brushtop notochaetae with a protruding tip.

Dipolydora bidentata: Tony's slide showed paired methyl green spots as a character but Leslie warned attendees not to rely on stain pattern solely for the ID of this species as other spionids have very similar paired pigment spots after staining.

Dipolydora socialis: Paired pigment spots from staining start further back at about setiger 20. Shallow bays and harbors. Leslie stated that most *Dipolydora* species have gizzard plates, but none are as hard as those of *D. socialis*; you can feel them with your forceps and they are usually found between setigers 16-21.

Tony then moved on to ***species that might occur*** in the infauna of the SCB:

Boccardia proboscidea: Found in fine sands, intertidal to 15 meters. Prostomium has black bands on each side.

Leslie mentioned that *Boccardia claparedei* (Kinberg 1866), described from Brazil, has been found in Newport, Oregon. It is similar in appearance to *B. proboscidea* but differs in the placement of the black coloration on the prostomium and caruncle length. People should check their specimens of *B. proboscidea* carefully to make sure *B. claparedei* isn't occuring as well. See Leslie's composite photo showing both species at:
https://www.scamit.org/documents/polychaete/

Boccardiella hamata: Anterior dorsum and ventrum with black speckling. Bays and estuaries.

Dipolydora akaina: Could be found in intermediate shelf depths 45-200 meters, no real stain pattern evident, maybe some slight banding between the parapodia. Distinct modified chaetae that can only be seen under high power, and no companion setae. Cone-shaped bundles of smooth notopodial spines in posterior notopodia, usually only tips are visible, need to check with substage lighting or on compound microscope.

Dipolydora barbilla: Have a convex shelf on spines of the modified 5th chaetiger. Posterior notopodial spines present, spines have small barbs and are not emergent from parapodia; need to check with a compound microscope.

Dipolydora barbilla
Bight 2013 Sta. 9152 31jul13 27 m
Image by K. Barwick

Polydora cirrosa: Very enlarged modified 5th chaetiger. Medial antenna present, branchiae start on chaetiger 7.

Polydora cornuta: Modified 5th chaetiger has spines with distinct accessory tooth, no superior or inferior chaetae present.

Polydora narica: Lateral black bands on palps and on each side of several anterior chaetigers. Modified 5th chaetiger very enlarged compared to 4th & 6th chaetigers. Slight incision of prostomium. Leslie mentioned that Hartman (1961) and Blake's (1996) *P. limicola* are actually *P. narica* and that Blake's *Polydora* sp (p. 176) is also *P. narica*. True *P. limicola*, described from the Sea of Japan, has no pigmentation. *P. narica* can be found from intertidal and shelf depths, and in estuaries.

Polydora nuchalis: Lateral pigment spots next to the prostomium, has superior and inferior chaetae on the modified 5th chaetiger. No apparent stain pattern with methyl green.

Pseudopolydora paucibranchiata: Rounded prostomium, modified spines of 5th chaetiger form J-shaped (can sometimes vary and look like a "U") double row, outer row of geniculate spines, inner row of simple falcate spines. Invasive species common in bays, harbors, and estuaries.

It was then time for Leslie to take the floor and give her own thoughts on the Spionidae of the SCB. She presented a large PowerPoint with information on characters, keys, generic definitions, species lists, and most of the described and provisional species for the area.

To begin, Leslie stressed that if you have an individual that doesn't fit anything in the key, don't try to force it. Go to the best possible descriptions of similar species in the key or table you use and then decide if you have a match. The SCB still has many undescribed local species as well as new introduced species. For example, during the 2011 CDFW Invasive Species survey Leslie found *Polydora hoplura* Claparede, 1868, the first occurrence for this coast (see Radashevsky & Migotto, 2017). Document any oddball specimens and share the information so others can be on the look-out for more. Also, small juveniles may not have fully developed pygidiums which can lead to incorrect identifications. Specimens that are incomplete and don't have unique species-level characters (such as a type of major spine, pigmentation, or stain pattern found only in one species) should be left at genus.

Aonides spp:
Prostomium conical, tapered anteriorly and peristomium poorly developed. When using the key in Blake (1996) it's important to remember that while our local species have prostomiums that are distally rounded they are relatively narrow compared to the broadly rounded prostomiums of most other spionid genera. Do not confuse them with *Prionospio lighti* or similar species. Two species we ID locally are *Aonides glandulosa* and *A.* sp. SD1 Langan, 2002. Leslie has made a table with *Aonides* spp characters and it will be uploaded to the SCAMIT website soon.

Dispio spp:
Elongated chaetae on chaetiger 1, pointed prostomium, first ~10 chaetigers with divided postchaetal lobes, and accessory branchiae on posterior side of anterior and median chaetigers. Delgado-Blas & Diaz-Diaz 2016 described 3 species from the SCB and restricted *D. uncinata* to the Gulf of Mexico. They provided a key to *Dispio* which doesn't align with what POTWs are seeing in the SCB. The difficulty may be that the specimens they used to describe the new species are smaller than we usually see and may have developmental differences. There are three species discussed by Delgado-Blas & Diaz-Diaz 2016: *D. anauncinata, D. lenislamellata, D. longibranchiata.*

Leslie stressed again we need to better describe our local species and document intraspecific variability, because they often don't match published descriptions.

Laonice spp:
Prostomium rounded to slightly incised, nuchal organs extend posteriorly, peristomium reduced, fused, or free, interparapodial genital pouches present, and sabre chaetae present. Leslie believes that when the local *L. cirrata* is run through molecular analysis, it will be shown to be separate from northern Europe specimens. For help with *Laonice*, see Rowe & Harris July 2005. Their Table includes two described, and three provisional, species: *L. cirrata, L. nuchala, L.* sp A Harris, *L.* sp Rowe, and *L.* "*pugettensis*" Phillips.

Malacoceros spp:
Prostomium with frontal horns, occipital antenna absent, branchiae are basally fused to dorsal lamellae and start from chaetiger 1 to near end of body, and hooded hooks either bi-, tri-, or quadridentate. *Malacoceros punctata* (Hartman 1961) was previously synonymized under *M. indicus*, a reportedly cosmopolitan species. *M. indicus* is currently being separated into distinct regional species and *M. punctata* will be revalidated (V. Radashevsky, pers. com. to L. Harris).

Spio spp & *Microspio* spp:
There are many undescribed species in these 2 genera that are being forced through the few keys that are available, and therefore are being incorrectly identified. If you have something that doesn't fit any current description, set them aside and try to describe your individual because it is quite likely a new species.

Some people believe that these 2 genera should not be separate. Phylogenetically they are very closely related. The morphological difference is: *Spio* have branchiae starting on chaetiger 1, while *Microspio* have branchiae starting on chaetiger 2. The use of shirlastain will help when struggling to decide if there are branchiae on chaetiger 1 or not. Species in both genera often have distinctive stain patterns, and some have unique arrangements of ventral organs which are most visible with methyl green. Among the local species are *Spio maciolekae* (previously referred to as *S.* sp A Lovel 1986 and *S.* sp B Harris), *S. maculata*, *S. butleri, S. cirrifera, S.* sp A Harris (syn. *Spio filifornis* of authors NEP), *S.* sp. C Harris, *S.* sp D Harris, *Microspio microcera*, *M. pigmentata*, *M. spinosa*, *M.* sp A Harris, *M.* sp DC1 Lovell.

Pygospiopsis spp*:*
Branchiae may be present from chaetiger 1,2, or 7, variable before chaetiger 7 and then continuing posteriorly after 7, basally free from postchaetael lamellae before 7 then fused to lamellae; modified chaetae in some anterior neuropodia; bilobed frontal margin but no horns; hooded hooks in neuropodia only. There are 3 species to watch for: *P. fauchaldi* (Lovell 1994, shelf), *P. antennata* Blake & Maciolek 2018 (1820 m), *P. occipitalis* (930 m). (Syn.: *Pseudatherospio* Lovell 1994 fide).The two genera were primarily separated by whether the branchiae started on chaetiger 1 or 2. The revision by Blake & Maciolek (2018) showed that anterior branchial distribution was variable.

Pygospio spp:
No frontal horns, branchiae present after chaetiger 10 and fused with notopodial lamellae (males with an additional single pair of branchiae on chaetiger 2 that is **not** fused to the lamellae), hooded hooks in neuropodia only, and pygidium with 4 thick glandular lobes. Use Blake's 1996 key for the 2 species - *Pygospio californica* and *P. elegans.* A third species, very small and heavily pigmented, is found intertidally and will be described by Radashevsky and Harris.

Rhynchospio spp:
Prostomium with frontal horns, caruncle present, occipital antenna absent, hooded hooks only in neuropodia, and sabre chaetae present. Similar to *Malacoceros* spp but branchiae start on the 2nd chaetiger instead of the 1st. There is only 1 species found locally - *Rhynchospio arenicola.* This was formerly synonymized under *R. glutaeus* but reinstated by Radashevsky et al 2014.

Scolelepis spp:
Prostomium sharply pointed, caruncle present, palps may have basal sheath. There are 2 subgenera: *Scolelepis* (hooded hooks falcate with 0-2 small apical teeth and straight shaft) and *Parascolelepis* (hooded hooks multidentate with large main fang, several apical teeth, and curved shaft). See L. Harris Table, April 2017. NEP species include *S. (P.) texana, S. (S.) acuta, S. (S.) occidentalis, S. (S.) tridentata, S. (S.) bullibranchiata,* members of the *Scolelepis (S.) squamata* complex*, S.(P.)* sp SD2*, Scolelepis (S.)* sp SF2*, S. (P.)* sp A Norris*, Scolelepis* sp B Brantley.

Leslie pointed out that one reason for the difficulty in determining characters like start of branchiae, number of branchiae, and presence of antennae, is that once they're detached there may not be any scars. If the structures are lost while the animal is still alive the skin &

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surrounding tissue can swell up and cover all traces of the attachment site. Scars are typically present if the structure falls out after preservation. Shirlastain shows attachment scars much better than methyl green.

Streblospio spp:
Small occipital antenna, peristomium forms large wings, single pair of large branchiae on chaetiger 1, noto- and neuropodial lamellae low and rounded, and pygidium with lappets, lacking cirri. One species: *Streblospio benedicti*, which many people feel is a complex.

Apoprionospio spp: Prostomium subtriangular, occipital antenna absent, notopodial postsetal lamellae of anterior chaetigers lateral rather than dorsal, branchiae from chaetiger 2: 3 pairs of cirriform and 4th pair with flattened plate-like pinnules. Can occur in large numbers in the right conditions. One species locally, *A. pygmaea.*

Paraprionospio spp: Prostomium is elongate, without caruncle, and flanked by lateral wings. 3 pairs of branchiae with flattened flabellate or bifoliate plate-like pinnules. Distinct transverse ridge or membrane between branchial bases on chaetiger 1. One species locally, *Paraprionospio alata.*

Prionospio spp: Prostomium without frontal horns, rounded or truncate. Noto- and neuropodial lamellae largest in branchial region; notopodial lamellae often connected by dorsal ridges. Many species in this genus have been described from other areas of the world. See key to species of *Prionopsio* from California (Blake, 1996). Besides the species mentioned below there are *P. marsupialia, P.* sp A Blake, *P.* sp A Harris, *P.* sp J Harris.

- *P. ehlersi* should be changed to *P. lobulata* for ed. 13 in Leslie's opinion
- *P. heterobranchia* should be changed to *P. newportensis* for ed. 13: *newportensis* reinstated and elevated to species rank by Delgado-Blas 2014
- *P. jubata* (syn: *Prionospio* sp A SCAMIT)
- *P. dubia* (syn: *Prionospio* sp B SCAMIT)
- *P. lighti* (syn: *P. cirrifera* of authors NEP)
- *P. steenstrupi* (Malmgren 1867 in Blake, 1996): Leslie feels this species is probably not local and needs confirmation by DNA

Spiophanes spp:
Lovell's Table on *Spiophanes* species is useful and can be found on the SCAMIT website in the Taxonomic Tools Section.

The Karen Meiβner (2005) paper/presentation, *Revision of the genus Spiophanes (Polychaeta, Spionidae); with new synonymies, new records and descriptions of new species,* is very useful with SEM pictures and figures that clearly define the characters. Six species to watch for: *Spiophanes duplex* (syn: *S.s missionensis* Hartman), *S. norrisii (*syn*: S. bombyx* of authors NEP*), S. wigleyi, S. berkeleyorum, S. fimbriata, S. kimballi.*

And with that, a very information-filled day was concluded.

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Please visit the SCAMIT Website at: www.scamit.org

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

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SOUTHERN CALIFORNIA ASSOCIATIONOF MARINE INVERTEBRATE TAXONOMISTS

November–December, 2018 SCAMIT Newsletter Vol. 37 No. 4

Arcanus sp, B'18 station 10265, 8 August 2018, 80m
Growing on a Gorgoniidae
Top spicule photo shows contaminants; sclerites (Gorgoniidae) and ossicles (Holothuroidea), not to mention most likely spicules from other sponge species encountered in the trawl.
Field photo by Z. Scott (CSD)
Spicule photos by M. Lilly (CSD)

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

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5 NOVEMBER 2018, B'18 TRAWL INVERTEBRATE FID REVIEW, OCSD

Attendance: Laura Terriquez, Kelvin Barwick, Danny Tang, OCSD; Maiko Kasuya, Megan Lilly, Wendy Enright, Ron Velarde, CSD; Jim Mann, Aquatic Bioassay; Jennifer Smolenski, Greg Lyon, Erin Oderlin, CLAEMD; Christine Boren, Bill Furlong, Jovairia "JoJo" Loan, Chase McDonald, Brent Haggin, Don Cadien, LACSD; Wayne Dossett, MBC; Mary Tamburro, Merkel & Assoc.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

Kelvin started the meeting asking attendees to do a "round robin" of introductions. Upcoming meetings were then announced and after, the taxonomy portion opened with Megan's discussion of B'18 trawl FID sponges.

Megan had created a very brief PowerPoint which reviewed 3 sponges she had attempted to ID from B'18 trawls. She showed photos of the animals in the field as well as spicule photos taken in the lab. Both she and Wendy Enright spent a bit of time attempting IDs and then sent their results to Don Cadien for his input (as part of the B'18 trawl invert voucher QA/QC process). The final identifications were:

- *Acarnus* sp (see cover photos)
- *Halichondria* sp
- *Lissodendoryx* sp

Megan briefly (and bitterly) complained about the difficulty in feeling confident regarding sponge identifications due to the strong possibility of "spicule contamination" in any given tissue sample. For a more thorough discussion of this problem, see SCAMIT NL Vol 31 nos. 3&4 (Sept-Dec 2012) which covers a meeting with Dave Elvin (one of the authors of the "sponge book"). She took the level of silence in the room as tacit agreement and sympathy.

Her next FID animal was a coral tentatively ID'ed as *Desmophyllum dianthus* (Scleractinia; Anthozoa). It was compared to an OCSD voucher and confirmed.

Danny had a few quick questions about some crustacea he encountered during the B'18 trawls. He asked for consensus/verification (which he received) that both, *Pasiphaea pacifica* and *Eusergestes similis* (Arthropoda; Decapoda) were not to be included in the data due to their pelagic nature. He then asked if anyone else was seeing variability in the rostrum of the decapod *Spirontocaris holmesi*? Chase confirmed he'd been seeing some variability in this structure.

That ended the discussion part of the meeting and we moved to the lab to spend the rest of day reviewing specimens.

Following is a summary of FID specimens organized by taxonomist and agency.

Brent (LACSD):

- B'18 station 10283, FID Polychaeta *Aphrodita* sp = *Aphrodita castanea*
- B'18 station 10296, FID Polychaeta *Aphrodita* sp = *Aphrodita castanea*

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JoJo (LACSD):

- FID ascidian = *Halocynthia igaboja*
- Very small, juvenile, Echinodermata = Asteroidea

Jennifer (CLAEMD):

- Zoanthid tentatively identified as *Epizoanthus induratum*. Megan looked at it but didn't feel qualified to make a "final call" and said it needed to be reviewed by Tony Phillips and Dean Pasko. (This identification was later confirmed by T. Phillips)
- FID Pennatulacea – it was an unusual specimen and no one felt confident about assigning it a species level identification. The idea of designating a provisional name was proposed. CLAEMD said they would consider that option if no more progress had been made on its identification by the time of the B'18 trawl data deadline

Erin (CLAEMD):

- The ascidian *Bathypera feminalba* – confirmed by Megan
- Juvenile, 3-armed asteroid which Megan thought might have been a *Myxoderma platyacanthum*, but could not confirm

Greg (CLAEMD):

- The gastropod *Simnia barbarensis* - confirmed by Ron
- The gastropod *Calinaticina oldroydii* - confirmed by Kelvin

Wayne (MBC):

- The holothuroid *Apostichopus* sp A – both the specimen and live photos were reviewed and the ID was confirmed
- The echinoid *Brisaster townsendi* - confirmed

19 NOVEMBER 2018, SPECIES LIST REVIEW COMMITTEE (SLRC), OCSD

Attendance: Megan Lilly, Wendy Enright, Katie Beauchamp, CSD; Larry Lovell, Tony Phillips, Dean Pasko, DCE; Ben Ferraro, Kelvin Barwick, OCSD; Jovairia "JoJo" Loan, Brent Haggin, Don Cadien, LACSD; Greg Lyon, Erin Oderlin, CLAEMD; Remote attendee – Leslie Harris, NHMLAC

The meeting was called to order by Kelvin who gave a very brief overview of the committee's structure and purpose. Kelvin was then nominated, and unanimously approved, to be the Chair for ed. 13 of the SCAMIT Species List.

Wendy Enright then brought up the csv file of the Species List she created and wanted feedback from the other agencies; is it working for them? JoJo said that it has been working well for LACSD but Brent also chimed in and said he noted that there were 2 higher order classification columns (Tribe and Superclass) that were not present in ed. 11. Greg Lyon is still working on it and will report back.

Tony opined that ed. 12 was one of the "cleanest" Lists produced so far, with far fewer spelling errors, typos, etc.

Publication Date: January 2020

Kelvin demonstrated his method of annotating his pdf working copy of the Species List so when it is time for the next edition, all his notes/comments are in one place.

Kelvin then queried the group about a reasonable time frame for publication of ed. 13. Wendy pointed out that since we have to use ed. 12 for the B'18 samples, we may as well wait to start working on ed. 13. Consensus was reached for 1 July 2020 as the tentative publication goal.

There was a brief discussion about whether efforts should be made to get the Species List published in a peer-reviewed journal. The suggestion originally came from our webmaster Dean Pentcheff but he unfortunately was not in attendance to explain his thoughts on this matter. Kelvin asked for suggestions on where (which Journals) the List should be published. Some recommendations were: Zoo Keys (Tony), SCAS (Larry), Checklist journals (Leslie). Arguments for the idea included: Brent - gives us more legitimacy among the scientific community; Ben – the List informs policy at the agencies, it would be nice to have it validated by the larger scientific community. However, Don brought up a legitimate con: why publish a List that is static and will be outdated within a year or two? We would then have an outdated List "stuck" in the literature.

Wendy and Brent offered to look at current published checklists and find out what the Journal requirements are, etc., and will report back at the next meeting.

Dean Pasko brought up the point that the biggest problem with our Species List being accepted and published is that it contains many provisional species (approx. 300) for which there is not adequate documentation as per the requirements of a peer-reviewed journal. Dean feels we need to "clean up" the provisional species before trying to pursue publication.

A discussion then ensued about both SCAMIT and "in-house" (among the agencies) provisional species. In order to clean up our provisional species listings both Dean and Ben suggested that we have meetings, by Phyla, to address this issue. As we meet we will review the provisional species and make a series of decisions regarding each species - (1) Is it supported by documentation? If not, then should it be expunged from the SCAMIT "hold" list? (2) If it is documented, is it in the SCAMIT Toolbox? If not, should it be uploaded? We decided these meetings need to begin sooner rather than later as this is an issue that's been needing attention for some time.

Back to the upcoming production of ed. 13, Brent will be sending out the various phyla sections to the leads for those groups. It will be up to the leads to disseminate the information to the secondary and tertiary members. Don also suggested that at least two weeks prior to our meetings any edits, and literature used to justify the edits, be sent out to the various subcommittees.

Our next SLRC meeting will be in 6 months after which we will start ramping up the frequency of our meetings to a quarterly schedule.

Leslie then brought up the idea of SCAMIT having a presence at the upcoming IPC 13 (13th International Polychaete Conference). It was discussed whether we should do a presentation on the "working" polychaete section of ed. 13 and seek feedback from the world renowned polychaete experts that will be present. This will be added as an agenda item for the upcoming Annual SCAMIT Membership meeting in December.

We then moved on to a discussion about the SCAMIT Database project and BRI (benthic response index) calculations. This subject was initially brought up by Erin and Greg, and so Kelvin turned the floor over to Erin. At CLAEMD they are concerned by the p-codes that are based on ed. 5 of the Species List (see Smith, R.W. et al 2001 for information on p-codes and

BRI). As the taxonomy has changed over the last 7(!) editions of the Species List, application of p-codes to the updated taxa names must be done individually by each agency, introducing potential inconsistencies. She and Greg feel that standardized application of appropriate p-codes to the current taxonomy is necessary for the BRI to function as intended. Without standardized application of p-codes, there is concern about discrepancy among the calculated BRI results. Circling back to the Database Tool, they feel it could help agencies update their species lists and stay consistent amongst each other with regards to p-codes and BRI calculations. She suggested, as an "action item", that each agency share p-codes to check for inconsistencies, and work with a single chosen benthic infauna data set to apply their BRI calculations, and subsequently compare their results. Assuming there are discrepancies, as we all suspect there might be, these can then be shown to SCCWRP as a way to leverage our request for help with the SCAMIT Database Tool. Kelvin stated that the idea is the Database could become the "keeper" of the BRI, so that as species lists are updated, the changes will cascade to the p-codes, creating a consistency amongst agencies and in usage.

It was mentioned that since all the agencies rely on BRI calculations, SCAMIT should bring this issue to CTAG (Commissioner Technical Advisory Group) and ask them to help us in our efforts to seek support from SCCWRP. We decided on people from the various agencies that would spearhead the efforts. Below are the suggested volunteers. Since some people were "volunteered in absentia", this list may change. Kelvin said that he could not be the Chair of the Committee as he feels overextended. However, he would want to participate as a representative of the SLRC/ OCSD:
CLAEMD – Erin Oderlin (Chair) and Greg Lyon
OCSD – Ben Ferraro, Kelvin Barwick
CSD – Wendy Enright, Maiko Kasuya and Ron Velarde
LACSD – JoJo Loan, Chase McDonald, Shelly Walther
SLRC – Kelvin Barwick
ABC - Karin Wisenbaker
MBC - ?

Kelvin will adapt a previous list serve group (original database committee) for this newly formed committee. He will be sharing the log on information with Erin (Chair).

We closed the day with a round table discussion. JoJo brought up the need for another B'18 Trawl Invertebrate FID meeting, and Kelvin agreed to add it to the annual meeting schedule. We also reviewed the "cut off" point, with regards to salinity, for species inclusion in the List. Animals inhabiting environs with ≥ 12 ppt salinity will be included; those from less saline habitats do not meet the requirements for inclusion based on the parameters spelled out in the front matter.

With that we created an "Action Items List" based on the day's decisions and adjourned.

3 DECEMBER 2018, ANNUAL MEMBERSHIP MEETING, SCCWRP

Attendance: Kelvin Barwick, Ben Ferraro, Danny Tang, Rob Gamber, OCSD; Wendy Enright, Megan Lilly, CSD; Cody Larsen, JoAnne Linnenbrink, Craig Campbell, Greg Lyon, Erin Oderlin, Jennifer Smolenski, CLAEMD; Dean Pentcheff, NHMLAC; Terra Petry, Jovairia Loan, Brent Haggin, Christine Boren, Bill Furlong, Norbert Lee, Don Cadien, LACSD; Larry Lovell, DCE

Kelvin Barwick, SCAMIT President, opened the meeting at 9:30. He started by discussing the situation with the Don Reish fund that SCAMIT had originally planned to collect and then donate

to the IPC for a student grant. However, Erin, our Treasurer, spoke with a tax accountant who advised SCAMIT that doing so could jeopardize our 501 (c)(3) status. So, people are encouraged to make private donations in Don Reish's memory and can do so through the CSULB 49'er foundation. The link for donating can be found on the IPC 13 website. The monies that Don Reish himself had donated have since been disbursed towards student grants.

The next topic was Institutional SCAMIT memberships. It was recently realized that this level of membership is not written or codified anywhere. It has always been passed down, through word of mouth from officer to officer, that an institutional membership includes 6 electronic memberships and 1 hard copy of the NL. We realized that this is a "pretty good deal" for whomever purchases this membership and so in April (a month prior to membership renewal month, May) the Executive Committee will revisit this issue and determine a new fee for an institutional membership and codify it in the membership form.

The creation of a PayPal account for SCAMIT has been a success. Erin reported that 36 members used this option for paying their dues. Unfortunately, Erin miscalculated the dues for PayPal users and was off by 2 cents (under). She personally made up the difference but next year there will be 2 cents added to the cost of paying your dues via PayPal.

Reviving the BATMAN (Benthic Assessment Taxonomy Management) group, or creating a similar type of working group, was the next subject. Erin Oderlin and Greg Lyon reviewed the problem of possible "drift" in application of the p-codes among the agencies and the resulting differences in BRI calculations. They had discussed this at the previous month's Species List Review Committee meeting and were covering it again for the attendees that had not been present. It is SCAMIT's hope to find a way to be the "keeper" of the p-codes and have them associated with the Species List and maintained in a database. This would allow for consistency among the agencies and SCAMIT would function much in the same way as it does for taxonomy. SCAMIT realizes it needs to come up with an actual dollar figure proposal to bring to CTAG and SCCWRP for help in finally getting the Database Tool completed, even if for now it serves the sole purpose of maintaining the integrity of the Species List and the p-codes.

The plan is for Erin and Greg to gather a list of p-codes from the various agencies and run test BRI calculations on an "unbiased" dataset (a previous Bight survey dataset was suggested). The results will show how much drift exists between the agencies.

A subcommittee will be formed to address this issue and it was decided that each of the agencies should have at least one taxonomist and one analyst, assigned to this committee. Near the end of the meeting Dr. Dave Gillett, of SCCWRP, joined us to give us his opinion on the issue. He agrees that we need to run a "test case" and look for evidence of a problem. Once we have that evidence he can take it to his supervisors at SCCWRP and ask for support for the SCAMIT database project, to help resolve this issue. This is no small matter as, at least for the POTWs (Publicly Owned Treatment Works), the use of the BRI is written in to their permits and is a required calculation.

Kelvin then gave a brief overview of the work being done by the Species List Review Committee. Edition 12 was successfully published on 1 July 2018, and work on ed. 13 has begun. Edition 13 will have a 2 year publication cycle and the aim is to have it published 1 July 2020. There has been some discussion on the pros and cons of having our List published in a peer-reviewed journal. An exploratory committee has been formed to research this option.

One possible problem with publishing the List to a peer-reviewed journal are the many SCAMIT provisional species contained therein. While attempts have been made in the past to "clean up" the List, it has yet to be accomplished. So, the SLRC will be having a special "provisional species review" meeting on December 19th at SCCWRP. The goal for that day is to go through the provisional species, broken up into groups by phyla and their respective experts, and simply answer two questions: (1) Is there documentation to support the species? (2) If yes, is it sufficient and has it been distributed to SCAMIT members in some fashion? Species for which there is not adequate documentation should be culled and that will be a start towards "de-cluttering" the Species List.

We then went on to schedule out SCAMIT meetings for the next 12 months and were successful in filling the calendar.

A delicious lunch, provided by SCAMIT as a way of thanking our members, was enjoyed by all.

19 DECEMBER 2018, SLRC PROVISIONAL SPECIES REVIEW, SCCWRP

Attendance: Kelvin Barwick, Ben Ferraro, Danny Tang, OCSD; Jovairia Loan, Brent Haggin, Don Cadien, LACSD; Leslie Harris, NHMLAC; Jennifer Smolenski, Greg Lyon, Erin Oderlin, CLAEMD; Larry Lovell, Dean Pasko, Tony Phillips, DCE; Megan Lilly, Wendy Enright, CSD

The purpose of the meeting was to review agencies' provisional species spreadsheets and rank each species from 1-3; with 1 = insufficient material, probably no future material coming, should be moved to archive list; 2 = sufficient information for identification purposes and for in-house SCAMIT use, but not ready for publication; and 3 = complete voucher or ID sheet that is sufficient for publication. A ranking of "3" means if the SCAMIT List is published in a peer-reviewed journal and we are asked about a species, we can provide complete and detailed information that will allow said species to be distinguished and identified. In the morning we were able to cover, mollusks, echinoderms, crustaceans, and all of the miscellaneous phyla except cnidaria and polycladida.

We decided to break for lunch at that point and hear from Dr. Steve Weisberg (SCCWRP Director) as he'd asked for a few minutes of our time. Steve had been contacted by BOEM (Bureau of Ocean Energy Management) as they are looking to create a regional ocean data portal on the west coast. They asked Steve for his recommendation on which aspect of ocean monitoring to look at for concerns related to acidification and other factors. They are exploring aquaculture, Marine Protected Areas (MPAs), environmental monitoring, etc. Steve suggested looking at the benthos. The possibility of applying the M-AMBI (Multivariate AZTI Marine Biotic Index, the index adopted by the EPA for application to its coastal assessments) was discussed. Before any analysis can begin there is a need to identify all the large west coast datasets, e.g., EMAP, POTW monitoring (Washington, Oregon, California), and academia. Once the datasets have been gathered, they need to be "harmonized." The taxonomic aspect of this is where Steve thinks SCAMIT could play an important role. He is offering to use some of the monies provided by BOEM to pay SCAMIT to help harmonize names up and down the entire west coast. BOEM is particularly interested in Morro Bay and Humboldt Bay but will probably start in Southern California due to the number and thoroughness of the region's data sets. The first step is for SCCWRP to put together a list of existing datasets.

Steve wanted to gauge our interest. He is willing to give a $10k donation to SCAMIT to have us help work on the taxonomic harmonization aspect. The question arose, does SCAMIT want

to create a contractual obligation with SCCWRP? Can we? Can we do it with individuals? The contract between BOEM and SCCWRP is being written as having 3 one-year extensions with the hopes of slowly moving up the coast.

Don asked, who is going to be guarding the gate of the portal? Steve replied that SCCWRP will, since the data will be on SCCWRP's server. Don felt it was important that whoever is handling the data, understand the concept of taxonomy, with which the staff at SCCWRP are quite familiar.

Brent asked Steve what was the expected time line for the first part of the project? He replied that one hadn't been set yet but was hoping to get data together by May 2019 and hopefully have SCAMIT work on it in June. Ultimately, he wants to provide BOEM with a database with the M-AMBI applied and have created a few maps, etc., showing examples of its usefulness.

Larry mentioned that Henry Lee (EPA) recently worked with DCE (Dancing Coyote Environmental) on the CBRAT (Coastal Biotic Response Assessment Tool) which has some similarities to what was being discussed. Although CBRAT was looking more at abundance, distribution, and life history of specific phyla.

Wendy recommended that we take the idea back to our respective program managers and see if they feel we have resources to provide.

Don pointed out that there will be two levels of harmonization; the 1st level will rely only on published literature; the 2nd (higher) level, will involve efforts by practicing taxonomists up the entire assessed range.

Someone mentioned the now defunct NAMIT (Northern Association of Marine Invertebrate Taxonomists) who covered the Pacific Northwest. Do they have old data that would be accessible? It was suggested that someone try to find contacts among previous members.

In the afternoon we broke into two groups; one working on polyclads and cnidarians, and the other on polychaetes.

After the provisional species review was over those of us remaining readjourned in the large conference room and discussed how and if SCAMIT is going to move forward with Steve Weisberg's proposal. After much discussion about pros, cons, options, etc., with helpful input from Dean Pasko about what it was like to run the CBRAT program for the EPA, we decided that the very first step is to have a CPA verify that SCAMIT, as a non-profit, can accept this project without jeopardizing our 501 (c)(3) status. Erin Oderlin agreed to this task and will report back.

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

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SOUTHERN CALIFORNIA ASSOCIATIONOF MARINE INVERTEBRATE TAXONOMISTS

Jan/Feb/March/April 2019 SCAMIT Newsletter Vol. 37 No. 5&6

Acanthodoris sp - unusual color morph of *Acanthodoris rhodoceras*??
B'18 station 10237, 1 August 2018, 12m
Photo by Z. Scott, CSD.

This Issue

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: January 2020

14 JANUARY 2019, B'18 TRAWL INVERTEBRATE FIDs CONTINUED, OCSD

Attendance: Ron Velarde, Megan Lilly, Wendy Enright, Maiko Kasuya, CSD; Erin Oderlin, Greg Lyon, Jennifer Smolenski, CLAEMD; Don Cadien, Jovairia Loan, Chase McDonald, LACSD; Tony Phillips, Dean Pasko, DCE; Jim Mann, Aquatic Bioassay; Mike McCarthy, Danny Tang, Ernest Ruckman, Ben Ferraro, Kelvin Barwick, OCSD; Alex Tasoff, California Lutheran University.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

This meeting was a continuation of the B'18 trawl invertebrate FIDs. City of San Diego shared photos and specimens of a small pink anemone found living on airplane wreckage at 173m (B'18 station 10992, 7 September 2018). It resembled *Stephanauge* but consensus was to leave it at Actiniaria due to its small size and no one being comfortable with the prospect of its dissection revealing anything of significance. The other specimen brought by CSD was an unusually colored *Acanthodoris* from B'18 station 10237, 1 August 2018, 12m (see cover photo). A tentative ID of *A. rhodoceras* was assigned prior to the meeting, but Wendy and Megan were unsure how much variability in color was allowable. Those present at the meeting felt it should be left at *Acanthodoris* sp.

Jennifer wanted to revisit their mysterious Pennatulacea from the November FID meeting since Dean Pasko and Tony Phillips were now both present. It was collected at B'18 station 10245, 4 Sept 2019, 57m in Santa Monica Bay. It closely resembled a *Virgularia*, but had very large, orange polyps and large leaves, and it was neither of our two "known" species, *V. agassizii*, or *V. californica*. Neither Dean or Tony could assign a species name, and it was suggested that it be given the provisional name, Pennatulacea sp HYP1. CLAEMD has been seeing this unusual Virgularid in their standard monitoring stations since 2015.

Further specifics of the meeting were not noted, but it was a productive day with many specimens examined and most FIDs being resolved to some level whether it was to species or only to Family.

NO MEETING IN FEBRUARY 2019

11 MARCH 2019, B'18 POLYCHAETE FIDs, NHMLAC

Attendance: Brent Haggin, Bill Furlong, Norbert Lee, LACSD; Angelica Zavala Lopez, MTS; Gabriel Rodriguez, Veronica Rodriguez-Villanueva, Adam Webb, Maiko Kasuya, CSD; Bryce Perog, CSU Fullerton; Mike McCarthy, Ernest Ruckman, Rob Gamber, Kelvin Barwick, OCSD; Larry Lovell, DCE; Greg Lyon, Jennifer Smolenski, Erin Oderlin, CLAEMD

At this point a discussion began about B'18 samples, progress, time lines, etc. Due to LACSD's time constraints for routine work, the B'18 Benthic QC probably won't be attempted until April-June of 2020.

It was announced that certain volumes of the MMS Atlas are available through CLAEMD. If you are interested in a copy please contact Jennifer at: jennifer.smolenski@lacity.org.

And with that it was time for polychaetes…Following is an accounting of FIDs examined:

***Aphrodita* sp (LACSD Station 4D – 30m) – Brent Haggin**.
The specimens Brent shared were ≈ 1/8″, at which point Kelvin asked if there wasn't a SCAMIT convention to back off if it is less than 1/2″? Larry agreed that was the convention. Brent went through the characters as to why this individual had conflicting diagnostics, and then set it on the dissecting scope to be displayed on a screen. The room unanimously, and immediately, agreed that this worm was too small to be identified to species. Larry reiterated that IDs should be left at *Aphrodita* sp for animals ≈.5 mm to 1.5 mm.

***Kirkegaardia* sp (LACSD Station 8B – 150m) – Brent Haggin**
This animal had a stain pattern that resembled *Kirkegaardia* sp SD9 (Rodriquez-Villanueva 2008 §). Erin asked if there is a certain region of the body to look for chaetal serrations? Veronica responded that it should be in the mid to posterior part of the body. Larry added, "as far posterior as possible". A defnitive ID of this specimen was not achieved. However, it was recorded as Cirratulidae in the LACSD data. Brent noted - This animal presents a potential problem as *Aphelochaeta* sp HYP5 Phillips 2004 § and *Kirkegaardia* sp SD9 have a similar description and stain pattern and discerning between the two depends on interpretation of the serrations on the neurochaetae.

***Euclymeninae* sp (LACSD Station 7D – 30m) – Brent Haggin**
The methyl green (MG) staining pattern revealed a widow's peak and a lateral stripe; could this be a third species? Larry noted that all 3 individuals had a lateral **and** ventral stripe, which identified them as *Euclymeninae* sp A. Discussion ensued about variability and interpretation of MG staining patterns.

***Eucranta noculata* (Polynoid – 300m station) – Norbert Lee**
The specimen was examined by all and Kelvin tried to view chaetal characters at 1000x. Despite everyone's best efforts, no conclusion was reached as to the accuracy of the ID.

8 APRIL 2019, CRUSTACEA FIDs AND TOOLBOX REVIEW, LEAD B. FERRARO, OCSD

Attendance: Kelvin Barwick, Ben Ferraro, Danny Tang, Ernie Ruckman, OCSD; Craig Campbell, Cody Larsen, Joanne Linnenbrink, CLAEMD; Don Cadien, Jovairia Loan, LACSD; Katie Beauchamp, CSD

Kelvin opened the meeting by mentioning that neither the SCAMIT Secretary, nor the Secretary's appointed alternate for taking meeting minutes (i.e. Jennifer Smolenski), were present at today's meeting. He requested a volunteer, and with hesitation, Jojo Loan graciously offered. Kelvin proposed that future meetings, instead of focusing on one phyla, could rather involve having the "newer taxonomists" (those who now have a workable familiarity with their respective phyla) break off into smaller groups, and have discussions amongst themselves regarding their specialized phyla. These could involve questions that they have about specimens, or just looking at/sharing interesting specimens. Kelvin added that this type of meeting would work best in a lab where training scopes are "at the ready", such as OCSD, LACSD, or CSD. This proposal was met with general agreement. With no other business items to discuss, Kelvin, Danny, and Ernie excused themselves to allow for the main taxonomic portion, led by Ben Ferraro, to begin.

Publication Date: January 2020

The purpose of the meeting was to go through the SCAMIT website's Taxonomic Toolbox Arthropod section, and to determine whether changes needed to be made. The focus was to address 4 points: (1) is the information in the toolbox sufficient for the listed species? (2) is there supplementary material that could be added? (3) is the information still relevant/applicable? (4) should any items be removed?

Ben was recording any Toolbox changes needed and he will provide a listing to Dean Pentcheff for website updates. He began the meeting by saying there were over 700 Arthropod Toolbox items; there would be a lot to cover... He suggested that DCE may have additional supplementary material to add, but that will require a discussion with a DCE representative.

They started from the beginning of the Arthropod list:

Class Pycnogonida:

All the information in the Toolbox is still relevant for Pyconogonids. Craig suggested that we also include Bonnie Bain's Pycnogonid key which she provided at a SCAMIT meeting she lead in May 2017 (NHMLAC). Ben suggested creating more voucher sheets for pyconogonids. Don mentioned that most of the current literature should suffice for identification purposes, but Ben replied that voucher sheets are needed for provisional species encountered. Everyone agreed this would be helpful.

Order Isopoda

Don mentioned an email from Tim Stebbins (March 27, 2019) with regards to isopods in which he suggested deleting two items that have been obsolete since 1999; Ben had already recorded the necessary changes to his list. Thanks Tim!

Order Decapoda

It was agreed that for Order Decapoda, the information contained in the "Other Useful Tools" was valid and helpful. Mary Wicksten's monograph (Wicksten 2012) was mentioned as a good reference and it was suggested a link be added. Greg Jensen's (2014) decapod book, "Crabs and Shrimps of the Pacific Coast" was also recommended. Craig mentioned that there is an electronic version that has an interactive key. It was unclear if it was available to all, or only for subscribers.

Superfamily Sergestoidea

It was agreed upon that although it's a pelagic group, and therefore not reported, it will remain in the Toolbox. It contains valuable information for determining species. Don also recommended Michel Hendrickx (1995 & 1996) as a valuable resource for Eastern Pacific species, with special focus on those found off Mexico.

Family Galatheidae

There is a "California Galatheids" key, authored by Don, available in the Toolbox. Don noted that *Munida tenella* is not included in the key (although it has been encountered by CSD, and is included in the SCAMIT list). He offered to modify the key to include the species.
A picture was taken during the Bight'18 Intercalibration trawl comparing *Munida hispida* and *Pleuroncodes planipes*. It provides a good morphological comparison of the two species, and Ben offered to upload that photo.

Superfamily Paguroidea

Don suggested creating an 'Other Useful Tools' section for this Superfamily and including a brief list of references. He offered to create this list and send it to Ben. For family Paguridae, Don noted the need for a reference sheet comparing *Pagurus armatus* and *Pagurus spilocarpus* because of their similar characteristics (Ed note * - this sheet has since been created by M. Lilly and distributed; it will be uploaded).

Superfamily Cancroidea

Joanne asked if there was a way to differentiate juvenile Cancer crabs. Don mentioned that there is a juvenile Cancer crab key, but there is no comprehensive treatment of juveniles in a growth series; one can't definitively know if the species was identified correctly unless the specimen is allowed to grow. He suggested looking at Mary Wicksten's monograph to see if there are any descriptions for juveniles. (Ed note* - CSD has a "1.5 cm rule", in that if the specimen is smaller than 1.5 cm, the ID is left at Cancridae).

Superfamily Majoidea

Ben offered to provide a key for the spider crabs, written by D.L. Zmarzly.

Superfamily Pinnotheroidea,

Craig offered to provide a *Pinnixa* key written by D.L. Zmarzly (1992).

Family Hippolytidae

There is a "Key to the Genus *Spirontocaris*" in the Toolbox that includes *Spirontocaris* sp 1. The one concern was what/where is this species (it's not included on the SCAMIT list), but otherwise, Don considered this key to be a valuable resource. Jojo mentioned that Wicksten's monograph also has keys for *Spirontocaris* that are quite helpful; there was general consensus that Mary's monograph has proven quite useful.

Family Pandalidae

There is a "Revised Key to the Pandalidae of California", written by Don (1998). Jojo pointed out that *Plesionika carinirostris* was not included in the key; LACSD just came across this species in their recent February trawls. Don offered to update the key to reflect this species.

Class Ostracoda

There is a *Euphilomedes* comparison sheet (unknown author) in circulation that has been useful in the identification of *Euphilomedes* spp. Ben will ensure that it's added to the Toolbox.

With examination of specific groups complete, more general topics ensued. Ben suggested adding more good quality photos to the Toolbox and it would be helpful to have more voucher sheets. Ben stated that due to the Bight'18 project, most of the POTWs have trawl invertebrate "photo vouchers" that have been confirmed by other taxonomists and which could easily be added to the Toolbox. Although the focus for the day was on Arthropod photos, it could potentially apply to the entirety of the Toolbox. There was a concern about file size with such a feat, and Ben said he would discuss it with Dean Pentcheff, SCAMIT's webmaster.

Another suggestion was to add hyperlinks to the pdf files in the Toolbox, that would then direct the user to a photograph of the species in question. There was a concern about authentication of the photos (if they were correctly identified species), but ultimately it was agreed that it shouldn't be an issue since the photos would have been authenticated by the respective labs/scientists.

There are Generic name changes throughout the Arthropoda section of the Toolbox, which are not necessarily reflected on the sheets, but the Toolbox links will at least be updated to reflect the appropriate species names.

There were also cases of duplicate pdf files in various sections and those will be removed.

There was a document with the entirety of its information pulled directly from Wikipedia (in the Toolbox under the Ostracods - Other Useful Tools section, "Ostracoda_An Introduction"). It was agreed that it wasn't necessary to include Wikipedia references as a resource in the Toolbox.

It was decided, after finishing the Ostracods, this was a good place to end the meeting. Review of everything in the Toolbox for Arthropods was complete except for the Superorder Peracarida. Ben cautioned that it *may* take another 3 meetings to get through Peracarida.

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SOUTHERN CALIFORNIA ASSOCIATIONOF MARINE INVERTEBRATE TAXONOMISTS

May–Aug, 2019 SCAMIT Newsletter Vol. 38 No. 1&2

Heterophoxus cf ellisi
San Diego Bay Dredge Station B5C, 2006
Photo by D. Pasko

This Issue

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: February 2020

13 MAY 2019, *HETEROPHOXUS* AND "FRIENDS" (D. Pasko), AND ARTHROPOD TOOLBOX REVIEW (B. FERRARO), OCSD

Attendance: Craig Campbell, Joanne Linnenbrink, CLAEMD; Katie Beauchamp, CSD; Dean Pasko, Tony Phillips, DCE; Don Cadien, Chase McDonald, Jovairia Loan, LACSD; Angelica Zavala Lopez, MTS; Kathy Omura, NHMLAC; Kelvin Barwick, Ben Ferraro, Danny Tang, OCSD

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

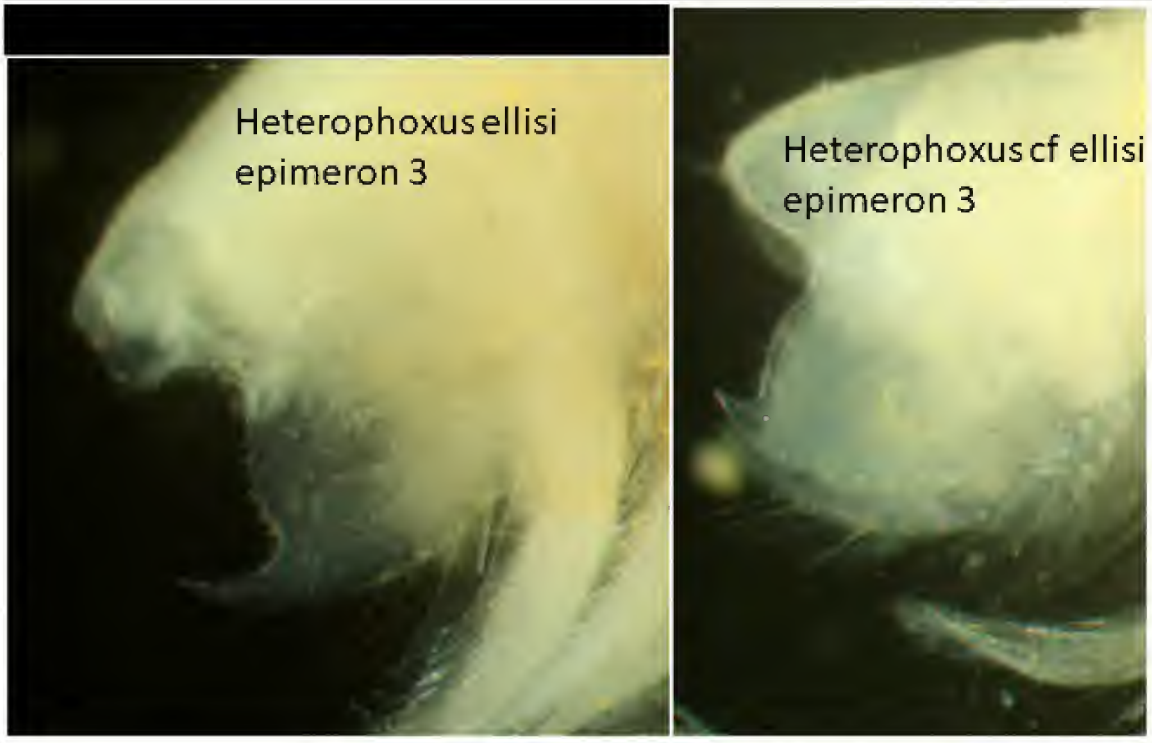
Kelvin began the meeting with the announcement of the SCAMIT officer election results; there were no changes or surprises and the current suite of officers was reelected. He then covered upcoming meetings; June 10th will be Aplacophora at OCSD; no meeting in July; the August 12th meeting will focus on Annelids, but unsure of what form that meeting will take as the IPC13 conference is being held the same month in Long Beach; September 9th will be on Miscellaneous Phyla FIDs at OCSD; October 14th will cover Mollusks at LACSD; November 11th will cover Echinoderms at OCSD; the annual All Hands meeting will be December 9th at SCCWRP.

Kelvin also mentioned that two meetings per month may become necessary due to ongoing Bight'18 taxonomy. However, he asked people to "speak up" if interested (through the SCAMIT List Server at least). It was understood that not everyone was processing their Bight'18 infauna samples on the same schedule, so people may not yet know whether multiple meetings per month would be useful.

With no other business items to discuss, Kelvin and Danny excused themselves, and Dean Pasko opened the discussion on Phoxocephalids/*Heterophoxus*.

Dean's primary focus for the meeting was *Heterophoxus ellisi*, *H. cf ellisi*, and *H. oculatus*. They are similar species, and easily confused, so the goal was to shed more light on their differences/similarities to assist in identification efforts. *H. affinis*, the other reported SCB *Heterophoxus,* is distinguished from the above by the absence of setae along the posterior margin of pereopod (P)7, Article (Art) 6 and reduction (or absence) of eyes. Addtionally, *H. affinis* is typically found in deeper waters than the species being discussed here.

- *H. ellisi*, *H. cf ellisi*, and *H. oculatus* are the most commonly encountered *Heterophoxus* in the Southern California Bight (SCB).
- *H. cf ellisi* is a shallow-water, embayment species, while *H. oculatus* and *H. ellisi* are both typically offshore species.
- The epimeron (Ep) 3 for both *H. oculatus* and *H. ellisi*, has a large processes/tooth on the postero-distal end. On a relative scale, the Ep 3 tooth of each of these species is ≥1/3 the length of the straight portion of the Ep 3 posterior margin.
- Whereas *H. cf ellisi* has a small Ep 3 tooth. The tooth is ≤¼ the length of the straight portion of the posterior margin.
- *H. ellisi*, P6, Art 6, have singly inserted setae along the entire posterior margin.



- *H. ellisi*, P6, Art 5, will also have multiple sets of spine-seta pairings (i.e., a spine paired with a plumose seta) along the posterior margin.
- *H. oculatus*, P6, Art 6, has a combination of singly and doubly inserted setae along the posterior margin, most often with two or three pairs of doubly inserted setal pairs.
- *H. oculatus*, P6, Art 5, posterior margin has 1-3 unpaired spines (same as seen on *H. cf ellisi*).
- *H. cf ellisi*, P6, Art 6, will consist primarily of singly inserted setae in the posterior margin, with the occasional set of paired setae present distally. Dean also pointed out that when looking at that distal end of article 6 (where article 6 attaches to article 7, the dactyl), there will always be a setal bundle consisting of 3+ setae at the end of the segment.
- *H. cf ellisi*, P6, Art 5, posterior margin has 1-3 unpaired spines (same as seen on *H. oculatus*).

Dean discussed the potential for confusing *H. cf ellisi* and *H. oculatus* since *H. cf ellisi* can occasionally have a pair of doubly-inserted setae on P6 Art 6, the character used to distinguish *H. oculatus* from other *Heterophoxus* taxa. However, the two species can be distinguished by the size of the Ep 3 tooth: large in *H. oculatus* and small in *H. cf ellisi*.

Dean also pointed out that SCAMIT's standard recommendation for specimens of *Heterophoxus* where one or both P6 is missing has been to report them at the genus level because of the variability of the setal bundle arrangement on P6. But, he noted that the shallow water *H. cf ellisi* is different enough due to the small size of the tooth on Ep 3, from *H. ellisi* and *H. oculatus*, that a specific assignment can be made. Dean offered to create an ID sheet to help differentiate these species.

Don suggested looking at Dean's presentation from last year's meeting on Phoxocephalids as a good reference (with photos!) for some of the characteristics described herein. The slides presented today update the previous presentation with the comparison of *H. oculatus*.

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Dean asked if others sampled *H. cf ellisi*, and only Tony claimed to have seen it. The POTW monitoring programs do not normally sample in bays (except perhaps for special regional monitoring), so this "bay" species is not normally seen.

Don asked if Dean noticed any sexual dimorphism with these species, and Dean said he hadn't, at least not with respect to the characters being considered.

Dean wanted to point out that at the beginning of his Phoxocephalid key, species are separated by the presence or absence of eyes, however he's come across some *H. affinis* in San Diego, without eyes (no ommatidia present either); he'll work on updating his key to reflect this. Don said that the presence or absence of eyes in this group, as we know from *H. oculatus*, are population-dependent, so they have the potential to develop if needed, but it depends on habitat.

Dean completed his presentation and then Chase mentioned he'd brought a Bight'18 FID Phoxocephalid (taken from 745m). Chase had used Dean's key (from last year's Phoxocephalid presentation), but was not convinced of the arrived at species. Dean mentioned that his intention with creating his key was to try to get away from using mouthparts for identification (whenever possible), and to try to simplify the key for everyone. He then suggested that we should refer to Don's key (available on the SCAMIT website), as it's more thorough in describing and utilizing some of the more systematic character-states. Don added that only when it was unavoidable, did he add those more-difficult characters in his key.

Dean also mentioned that he has been working on updating the simplified *Photis* key he provided at last year's meeting (Artificial Key to adult male and female *Photis* of SCB, 23 May 2017). Although the original key works very well, he still references the written dichotomous key on occasion for characteristics that aren't listed in the simplified key.

Photis sp SD12 is not in the original key but was validated by another specimen review and was recently encountered in a CSD sample. Due to this occurrence, Dean feels more comfortable adding it to the key.

There are two SCB *Photis* species that have strongly produced Ep 3: *Photis* sp A and *Photis* sp SD12, both of which are not commonly seen. Although *Photis macrotica* does have a slightly produced Ep 3 it is more obtuse or squared than produced in that it doesn't extend posteriorly. *Photis chiconola*, a deep water species (1000+m) also has a blunt, obtuse Ep 3, but is very rarely encountered.

Don also mentioned that for *Photis* sp A, a striking characteristic is that the coxae are massive and extend ventrally so that the legs are completely covered. He asked if the same were true for *Photis* sp SD12? Dean stated that the coxae of the latter are long and thin, but coxae 4 does not expand into a triangular shape like that of *Photis* sp A. The coxae of *Photis* sp SD12 are not broad but they are elongated and only moderately setose along the ventral margin. They are not so long as to cover the entire pereopod. Don asked if they were strap-like, and Dean confirmed that coxae 1 – 4 are all strap-like. *Photis* sp SD12 is found in offshore waters (recently collected in San Diego at station B11, 88m), and are also colorful (mottled coloration). Don asked if they were similar in coloration to *Photis* sp OC1, and Katie asked if it was a sort of a 'peppery' coloration. Dean stated that they were not 'peppery', but rather broad splotches along the carapace and on the pereopods. Tony asked if the pigmentation carries onto the coxae, and Dean replied that it does. Dean said he'll work on getting some photos taken of the CSD specimen.

Don asked if anyone had noticed any changes in the makeup of our *Photis* complement in recent years? Or if people have been seeing the northern forms decreasing, while the temperatures rise? Tony mentioned that he's noticed lower abundances of *Photis lacia* than in previous years. Dean agreed and has noticed the same decline.

Dean then suggested that *Nebalia pugettensis* Cmplx might just be a single species. After having looked at multiple specimens, he believes it may be more accurate to call it something other than 'complex'. Don suggested defining some of the characteristics and perhaps creating a provisional species.

Dean mentioned he's come across some Harpiniopsids that have a short pointed Ep 3 (as opposed to rounded with no hook at all, as the key describes); he's working on updating this portion of the key as well.

Dean has been working on updating and expanding the Mysid key (originally created by Ron Velarde and Don Cadien, 1992).

With that Dean concluded his portion of the meeting and opened the floor for Ben.

The purpose of Ben's portion of the meeting was to continue going through the Taxonomic Toolbox for Arthropods, and determining whether changes needed to be made. Ben, as previously, was recording any changes that will later be provided to Dean Pentcheff for website updates.

Picking up where we left off at the last meeting, Ben began by asking if anyone had a chance to look for species photos to add to the website. The general consensus was 'not yet'. His goal is to start a catalog of photos by agency/organization, that are "shareable" for the SCAMIT website.

Ben also asked if DCE would be willing to release their training materials to the SCAMIT website. Tony said that although he has no personal issues with providing the materials, his concern is those materials actually belong to the agencies that contracted DCE, who in turn created the material for the purposes of training their employees. Dean said that his hesitation in the past was that some of these materials have been works-in-progress, but now with the process of training, some kinks/issues in the training material have been resolved. His other reason for hesitating is because some of the materials may have pictures, etc. that may not have been properly referenced, so posting it on the website might be an issue. Don mentioned that Dean Pentcheff will most likely have experience with the legalities of this type of thing and may be able to provide some insight here.

The Toolbox Review picked up where it was left after the last meeting, with the Superorder Peracarida.

- For order Mysida, Dean will update and provide his updated Mysid key (and it will replace the rest of the Mysid keys in the Toolbox).
- For Order Tanaidacea, Dean suggested that Don's write-up on Tanaids should be included (under 'Other Useful Tools" for Tanaidacea).

After reviewing the Isopods, we moved on to Order Cumacea. We were only able to go through the first two families in the Toolbox (Family Bodotriidae and Diastylidae), and due to time constraints, decided this would be a good place to end the meeting. The remaining families of Order Cumacea, and all of the Amphipoda will be reviewed at a later date.

10 JUNE 2019, APLACOPHORA, OCSD

Attendance: Kelvin Barwick, OCSD; Terra Petry, Chase McDonald, Jovairia Loan, Don Cadien, LACSD; Greg Lyon, CLAEMD; Mike McCarthy, consultant; Wendy Enright, Megan Lilly, CSD; Kevin Kocot, Univ of Alabama; Patricia Seabourne

The business meeting began with Megan stating that she will be doing her best to catch up on newsletters over the next year and hopes to be back up to "current" by Spring of 2020 (after the B'18 deadline).

Kelvin then gave a brief presentation on Jim McClean's notebooks. During this presentation an "Action Item" list for Kelvin evolved:

- Find out the cost of scanning the remaining rolls of film that Jim used to create his manuscript and then write a proposal to the Executive Committee to use publication grant funds to have these images scanned
- Have a meeting/poll (?) to discuss how to make the information available
- Discuss online hosting possibilities with Dean Pentcheff
- Don suggested asking Pat LaFolette how he approached scanning the images

With the business meeting concluded we moved on to a presentation by Kevin Kocot. He shared images of unusual aplacophora sampled in the Antarctic, Iceland, and other locales. For the purposes of identification he used a combination of histology slides, SEM images, and DNA sequencing.

After Kevin's presentation we moved on to looking at specimens "on hand". The various agencies discussed birefrigence techniques, and efforts were made to try to create consensus about use and interpretation.

Megan had brought a chaetoderm specimen from B'18 10276 (CSD 8705), 31 July 2018, 87m. It was debated between *Falcidens longus* and "juv" Chaetodermatida. Consensus was reached for *F. longus*. CSD specimens of *Chaetoderma pacificum*, and *C. nanulum* were also examined.

Greg Lyon had brought numerous specimens which he had taken time to ID prior to the meeting, and was seeking verification. We examined and verified the following:

- *Limifossor fratula* - B18-10359 - 680m
- *Falcidens hartmanae* - B18-11000 - 380m
- *Chaetoderma marinelli* - B18-10257 - 80m
- *Chaetoderma nanulum* - B18-11000 - 380m
- *Chaetoderma pacificum* - B18-10304 - 168m

After reviewing Chaetoderms we briefly touched on two trawl invertebrate issues, for which Megan had received review requests. Megan shared specimensof *Dendraster terminalis* and *D. excentricus* and showed/discussed the differences in test and spine morphology. She also quickly reviewed how to separate *Pagurus armatus* and *P. spilocarpus* and had created a "field ID sheet" which she has since distributed.

NO MEETING JULY 2019

AUGUST 2019, 13TH INTERNATIONAL POLYCHAETE CONFERENCE

The 13th International Polychaete Conference (IPC13) was held aboard the Queen Mary in Long Beach, California from August 4 thru 9. SCAMIT members Leslie Harris (Vice President), Larry Lovell, and Bruno Pernet were part of the IPC Committee that hosted the conference. Over a hundred researchers, students, and working taxonomists from all over the world were in attendance. Eighteen SCAMIT members were present including POTWs (CSD, OCSD, LACSD, CLAEMD, and CSF), consulting organizations (DCE, MCT, and ARC), and members from various museums and universities. In the opening remarks, OCSD was acknowledged for their co-sponsorship of the conference and SCAMIT was thanked for their contribution to the IPC13 student support fund. The first day, volunteers staffed a booth to distribute SCAMIT informational materials, allow guests to peruse the website, and enjoy (and perhaps purchase...) SCAMIT swag.

Over 125 papers and posters were presented with wide ranging symposia topics including, Systematics, Evolution, Diversity, Biogeography, Physiology, Ecology, and Morphology. There were a number of presentations that showcased the use of various molecular techniques searching for possible hidden diversity at the species, generic, and family levels. Similar techniques were presented in a biogeographic context to look at cryptic diversity and genetic connectivity between adjoining deep-water basins.

SCAMIT Members attend the 13th International Polychaete Conference
4-9 August 2019, Long Beach, CA

Many papers looked at Polychaetes as bioengineers, exploring various tube-building techniques and burrowing strategies. Other interesting papers included: a look at the swimming behavior of the holoplagic *Tomopteris*; potential for saltational evolution in the anatomy of a Syllid; the evolution of Charlie Chaplin worms (Histriobdellidae); and the mapping of neuropeptides in the muscle cells associated with the penis of Dinophilidaes (1 mm polychaetes!). A look at the functional morphology of Sternaspidae (a locally common and enigmatic taxon) was a standout, but in the end, the underwater videography of annelids by Nannete Van Antwerp stole the show!

Presentations on new taxonomic hierarchies constructed through the use of phylogenetics included:

- Paulo Alves (Universidad Federal Fluminense):

  Nereidinae and Gymnonerinane are no longer considered monophylogenetic

  Melinnae does not branch into the same clade as Ampharetinae, but rather is revealed to be a sister group of Terebellidae

  The elevation of Polycirrinae, Thelepodinae, and Terebellinae to each of their respective family levels (Nogueira et al. 2013) may not be genetically valid. Phylogenetics puts Thelepodinae as a sister group to Terebellidae, and Polycirrinae actually nests within Terebellinae.

- Jenna Moore (Florida Museum of Natural History):

  Mesochaetopteris and *Chaetopteris* are monophyletic and sister clades

  Phyllochaetopterus is nested within *Spiochaetopterus*

- Polina Borisova (Shirshov Institute of Oceanology):

  Lumbrneris appears to be paraphyletic

  Ninoe and *Gallardoneris* are monophyletic

  Several characters associated with jaw morphology of Lumbrinerids viewed as synapomorphies appear to actually be homoplastic

However, per SCAMIT customs, our local taxa will have to go through a rigorous vetting process before any of these hierarchal changes are potentially reflected in our own Species List.

Two local POTW taxonomists presented posters. Brent Haggin of LACSD presented on his work with cryptic species of Orbiniids. Veronica Rodríguez-Villanueva of CSD was a co-author on three posters—1) on community and structure of soft bottom assemblages of the northwestern coast of Baja California, Mexico, 2) on spatial distribution of Cirratulid species along the west coast from Tijuana-Ensenada in relation to environmental conditions, and 3) on the levels of infestion of an undescribed *Polydora* species on the local farm stock of clams in Baja California, Mexico. Other SCAMIT members that presented included a poster by James Blake on a new species of *Atherospio* from the eastern Mediterranean Sea, and an oral presentation by Bruno Pernet on the distribution limitations of *Ficopomatus enigmaticus* in California.

Pat Hutchings of the Australian Museum presented an essay on the lamentable, yet still common, practice of applying European names to animals found half way across the globe. The example that was given was of Day's 1967 monograph on South African Polychaetes, in which he used many existing European names for local taxa; a common practice at the time. Locally, Olga Hartman did much of the same in her own work with Eastern Pacific taxa. This has led to the explosion of species having global distributions when they clearly should not. With no other choice, these name usages are perpetuated by non-taxonomists in most contemporary ecological reports, as well as by many non-ecologists in developmental, genetic, and systematic papers focusing on medical research.

Carol Simon (Stellenbosch University), a South African researcher, outlined a program and methodology which establishes a framework to begin tackling this situation for their local fauna. Perhaps she will present more on this at the next meeting (IPC14) which she will host in Cape Town, South Africa in 2022.

Touching memorials were given for notable Polychaete researchers who had passed away since the last meeting in 2017. Particular attention was given to Dr. Reish, who chaired the meeting the last time it was held in Long Beach. Dr Reish left an immense legacy among SCAMIT members and on Southern California taxonomy. Additionally, a history of the Alan Hancock Foundation was presented, as well as a midweek excursion to visit the Foundation's building on the campus of USC. Overall the conference was extremely informative, very inspiring, and the future of polychaete taxonomy looks to be ever growing and flourishing. SCAMIT was well represented and all who attended were grateful to have participated.
- Jennifer Smolenski & Kelvin Barwick

2018–2019 SCAMIT TREASURY SUMMARY

As dictated in our by-laws, the 2018–2019 Treasury Summary is attached. Please note that it discusses the status of our publication grant fund.

LITERATURE CITED

Nogueira JMM, Fitzhugh K, Hutchings P. 2013. The continuing challenge of phylogenetic relationships in Terebelliformia (Annelida : Polychaeta). Invertebrate Systematics 27:186–238. doi:10.1071/IS12062

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Please visit the SCAMIT Website at: www.scamit.org

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

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SCAMIT Treasury Summary
2018-2019

Below is the treasurer's report for 2018-2019. Last year we raised dues for the first time since the start of SCAMIT in 1982 from $15 to $20 for electronic memberships, $30 to $35 for hardcopy memberships, and $60 to $65 for institutional memberships. We have over 150 members across the US and worldwide. SCAMIT did not award a publication grant this past year. Please help get the word out that these funds are available. As stipulated in our grant policy, we have **$7,324.19** or 25% of our operating budget of $29,296.75 available for publication grants this year. The taxonomic database support tools on our website were maintained by our webmaster. The database expense totaled $517.50.

Account Balances (as of 5/31/19)

Checking	**$ 19,257.32**
Certificate of Deposit	**$ 10,039.43**
Total	**$ 29,296.75**

Income

2018-2019 Membership dues	$ 2,389.70
Interest from CD	$ 5.04
Total	**$ 2,394.74**

Expenses

Meeting refreshments	$ 261.96
Executive Committee Luncheon	$ 145.75
All-Member Christmas Luncheon	$ 196.79
Website Content & Design	$ 517.50
Newsletters (printing/postage)	$ 212.71
2018 ($136) & 2019 ($140) PO Box Renewal	$ 276.00
Don Reish Memorial IPC13 Student Donation	$ 2,000.00
Total	**$ 3,610.71**